

INDUSTRIAL-ARTS MAGAZINE

Incorporating: HANDICRAFT and the ARTS AND CRAFTS MAGAZINE

BOARD OF EDITORS

E. J. LAKE,
Head, Department of Art and Design,
University of Illinois, Champaign, Ill.

S. J. VAUGHN,
First Lieutenant, Sanitary Corps,
Fort McHenry, Md.

W. H. HENDERSON,
Major, Sanitary Corps,
Fort McHenry, Md.

WILLIAM C. BRUCE, Managing Editor

Published Monthly by

THE BRUCE PUBLISHING COMPANY, Milwaukee, Wis.

Established 1891



FRANK M. BRUCE, Publisher

H. KASTEN, Subscription Manager

W. J. LAKE, Eastern Advertising Manager

OFFICES:

Home Office: 354-364 Milwaukee Street
Milwaukee, Wis.

New York: 1 Madison Ave.

Vol. VII

DECEMBER, 1918

No. 12

TABLE OF CONTENTS

| | PAGE |
|---|--|
| Cover Design and Couplet..... | Edward J. Lake. |
| The Workman's Opportunity..... | Charles A. King..... 445 |
| About Toys..... | John T. Lemos..... 448 |
| English for Apprentices..... | R. W. Tarbell and J. J. Metz 452 |
| War Time Activities in the Schools..... | Bonnie E. Snow and Hugo B. Froehlich..... 455 |
| Three Christmas Activities..... | Royal B. Farnum..... 459 |
| Turkeys for Serbia..... | Charlotte A. Morton..... 461 |
| Elaborate Stagings of "Cut-Outs"..... | Charles Alma Byers..... 463 |
| War Carpentry in the Schools..... | Elizabeth M. Heath..... 465 |
| Historical Style and the Designer..... | Edward J. Lake..... 468 |
| Editorial..... | 470 |
| A Program for Vocational Guidance in the Schools..... | 472 |
| The United States School Garden Army in 1919..... | Lester S. Ivins..... 476 |
| Problems and Projects— | |
| Erecting a School Flag Pole..... | Clyde H. Oltman..... 477 |
| Rural School Work Bench..... | H. H. Braucher..... 477 |
| Two Christmas Projects..... | Fred Short..... 478 |
| A Foundry Cupola..... | Carl H. Hoerner..... 479 |
| A Simplified Concrete Testing Machine..... | Henry Giese..... 481 |
| An Airplane..... | M. F. Bussewitz..... 481 |
| War Work in St. Louis..... | 482 |
| An Achievement in House Building..... | 483 |
| Now, Are There Any Questions?..... | 484 |
| The Future in Industrial Arts..... | XX |
| Book Reviews..... | XXII |
| News and Notes from the Field..... | XXV |
| The War and the Schools..... | XXXI |
| Roll of Honor..... | XXXII |
| News of the Manufacturers..... | XXXIV |
| Personal News Notes..... | XXXIV |

Entered January 20, 1914, as second-class matter in the Postoffice at Milwaukee, Wis., under the Act of March 3, 1879. Copyright, 1918, by The Bruce Publishing Co. All rights reserved. Title registered as a Trade Mark in the U. S. Patent Office, January 16, 1917. Member of the Associated Business Papers and Audit Bureau of Circulations.

SUBSCRIPTION INFORMATION.

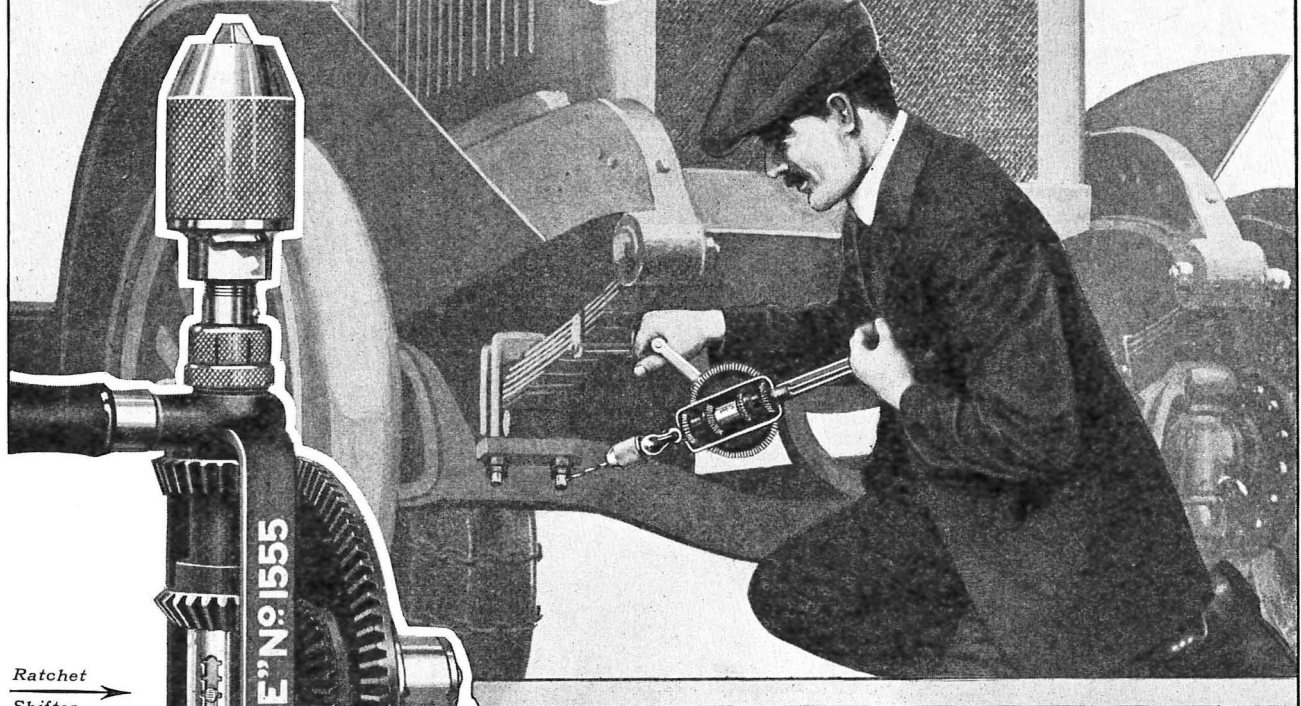
The subscription price of the *Magazine* is \$2.00 per year, payable in advance. Postage for Canadian and Mexican subscriptions, 35 cents; for foreign countries, 50 cents. Single copies, not over six months old, 25 cents; more than six months old, 50 cents. Notice for discontinuance of subscriptions must reach the Publication Office in Milwaukee, at least fifteen days before date of expiration, with full balance due to date. Notices for changes of address should invariably include the old as well as the new form of address. Complaints of non-receipt of subscribers' copies cannot be honored unless made within fifteen days after date of issue.

EDITORIAL CONTRIBUTIONS.

The Board of Editors invites contributions of all kinds bearing upon the Industrial-Arts Education, Manual Training, Art Instruction, Domestic Science, and related subjects. Unless otherwise arranged for, manuscripts, drawings, projects, news articles, etc., should be sent to the Publication Office in Milwaukee, where proper disposition will be made. The Board of Editors meets once or oftener each month in Chicago, and all contributions submitted are given careful attention. Contributions when accepted are paid for at regular space rates. In all cases manuscripts should be accompanied by full return postage.

The Industrial-Arts Magazine is on sale at Brentano's, 5th Ave. and 27th St., New York City; John Wanamaker, Market St., Philadelphia; A. C. McClurg & Co., 218 S. Wabash Ave., Chicago.

Multiplying Man's Power



In awkward places, or for speeding up any drilling job about a car—or anywhere—there's no tool like your "YANKEE" Breast Drill. It operates where other tools can't.

It has *two speeds and five adjustments*—all controlled at a finger touch, and without withdrawing tool from the work. The Ratchet Shifter gives you:—(1) Plain Drill, (2) Left-hand Ratchet, (3) Right-hand Ratchet, (4) DOUBLE Ratchet, (5) Gears Locked.

Where a full revolution of crank is not possible, use the "Double Ratchet." It keeps drill cutting on both forward and backward turns, no matter how slight the movement. No lost motion!

The quick adaptability to the job in hand, and the speed of "YANKEE" Tools, make any man a better mechanic, save his time and—save *him*.

"YANKEE" Ratchet Breast Drill

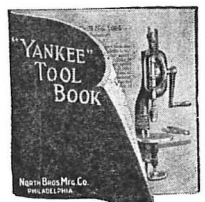
No. 1555—Length, 17 inches. Three-jaw chuck, for round shank drills up to $\frac{1}{2}$ " diam.
No. 555—Length, 17 $\frac{1}{2}$ inches. Two-jaw chuck, for holding both rounds and squares.

Price, \$8.75. *Your dealer can supply you*

WRITE us for free "YANKEE" Tool Book" of time- and labor-saving Ratchet Breast and Hand Drills, Automatic-feed Bench and Chain Drills, Ratchet Tap Wrenches, Removable Square-finish Vises, Plain, Ratchet and Spiral-Ratchet and Screw-drivers, etc.

NORTH BROS. MFG. CO., Philadelphia

"YANKEE"
Breast and
Hand Drills
are made in
14 styles and
sizes—from
10 $\frac{1}{2}$ to
17 $\frac{1}{2}$ in.



"YANKEE" TOOLS

Make Better Mechanics

THE WORKMAN'S OPPORTUNITY

Charles A. King, State Normal School, Plymouth, N. H.



PROBABLY every workman has wished fate had led him into some other method of earning a livelihood, and often he would gladly put behind him the knowledge and skill he has gained and begin in some other business in which he would hope to "get somewhere" quicker or easier than in the trade in which he was reared. The present is an opportune time to suggest to the capable, intelligent and ambitious workman of nearly every trade that the development of vocational training opens an avenue of employment and extended usefulness in which the professional skill he has acquired will be valuable capital.

The workman who is familiar with his trade in all its branches and desires to enter the teaching profession need not decide offhand that it is beyond the range of possibilities, tho I would not minimize the difficulties in store for an adult who has not been in school for a number of years in taking up the serious study of subjects which require extreme application and a well matured mind to master.

Industrial conditions growing out of the war have emphasized the value of hand training and demonstrated a fact which for a long time educators have tried to impress upon the public, that education should consist of doing things rather than thinking about them. No other evidence of the inability of the old type of education to really meet the needs of humanity, and to serve the nation in the time of her greatest need could have been quite so broadly convincing as the present scarcity of even partially trained workers and the exorbitant value placed upon the competent workman.

After the war is over there will be a demand for teachers of the manual arts in all grades in the public schools, the vocational schools already existing and those which will be established under the provision of the Smith-Hughes bill which grants federal aid and supervision for that purpose. The present shortage of teachers of the grade and secondary schools is so great in some states that it mounts up into the thousands, and the registration of most normal schools, colleges and universities is from fifteen to forty per cent less than normal; as these are the usual sources of supply for teachers, conclusions are obvious. The only other source from which teachers of the manual arts is drawn is the trades, and the workman who wishes to enter school work, and has the stamina to take himself in hand and study toward that end will,

if of suitable personality, be ready to accept a position when the time comes.

Parallel with these sources from which teachers are drawn there are three kinds of teachers needed: teachers of grade schools, of secondary schools, and of trade, vocational and industrial schools. The main source of supply of grade school teachers has been the training schools, while usually the teachers of secondary schools come from the colleges and universities; teachers of vocational, industrial and trade schools have come from the ranks of the trades they are to teach, as they must approach their work from the trade viewpoint, while the work of the teachers of the public school system is educational and cultural, being correlated with other school studies in the effort to give each student as many points of contact with life as possible.

The teacher entering school work from the trade should realize that he needs a far broader equipment than the simple knowledge of his subject, which may be considered the a-b-c of teaching, as the methods by which instruction is given are quite as important as the matter dealt with. Most teachers who have received their training in the trade find it difficult to grasp this point of view, which has compelled school boards to depend upon training schools for their teachers of the manual arts; the same reason explains why teachers' agencies are reluctant to recommend a man from a trade unless he shows evidence of a sincere change of heart.

The teacher of the grade and secondary school handwork must realize that the value of his work lies not in itself alone, but depends largely upon the nature and extent of the correlation between it and the subjects of the academic curriculum; one of the most valuable of the teacher's possessions is skill in introducing them at the time when there is an obvious relation between them and the work in hand. To do this effectively the teacher of tool work must know the source, growth and methods of preparation for the market of all the materials used, and of the history and evolution of tools and the processes of their manufacture.

While the teacher whose only equipment for teaching consists of tool knowledge and skill may be able to keep his students busy and interested making useful articles, he usually will consider that the excellence of the product of the class is the criterion by which his work will be judged; this is true in case of admiring relatives, the lay observer, and

unfortunately the majority of most school boards; the hundredth man who knows education may admit the excellence of the work on exhibition, but will reserve his judgment of the teacher's ability until he sees him in his classroom and can study his methods. The same is true regarding the work of trade or vocational school teachers, as hand skill is the chief aim of their work, but the work of the manual arts department of the public school system is an important factor in leading the student to see the relation between his school work and the affairs of life; the ability of the teacher to make this relation plain and educationally profitable is the measure of his professional efficiency.

The teacher who can inspire his students to think for themselves has attained the most important result of any form of education, and it is only thru an appeal to the interest that the student will voluntarily and eagerly apply himself to surmount a real difficulty. Thru fear of his teacher the child may apply himself to master some puzzle which he feels was invented only to make his life miserable, and that everything in which he is interested will be exactly as it was before whether he solves it correctly or not; on the other hand he is sure that the shop project upon which his interest is centered is of far greater importance to his particular needs than all the arithmetic or language lessons in the world, and any reasonable perplexity he encounters in his manual arts will be solved. The fact that the child's mind can be reached in no way so effectively as thru his interests, is the center around which are grouped the most essential differences between the old time and modern pedagogy.

During the time when the boy is changing from the formative to the adolescent period, often not more than a few weeks, he passes from the unconsciousness of the child to the self-consciousness of the adolescent. This physical change is most noticeable at the time when the boy's voice changes and he seems all hands and feet, but the results will be a co-ordination of the muscles, and of the hand, eye and mind entirely foreign to the grade child, and the youth finds he can easily do work which but a few months before was practically impossible. Up to this time the educational value of hand work depends largely upon the ability of the teacher to correlate his work with the elementary school subjects, but students of the high school require somewhat different treatment than those of the grade school, as between the ages of the two groups of students there is a greater physical difference than between the same range of ages at any other time of life.

The work of the high school should as far as possible have a direct bearing upon the next step in making the student a citizen, hence secondary school work tends toward an organization which will permit certain students to take vocational training with the view of entering definite occupations. Usually the

work of students headed toward engineering courses at the university, or those taking a general course, will have work of a semi-technical nature dealing with as many different mechanical processes as possible. Hence it will be seen that the demands upon the teacher of the manual arts of the secondary schools are of such a nature that beside having a broader technical training than the teacher of the grade schools, he must have a fair knowledge of adolescent psychology.

When industry is again upon its normal basis many classes will be formed of men who have learned parts of different trades in the war time industries, who will desire to improve their knowledge to meet the needs of peace. The teacher of such a class must have a broad knowledge of the trade he teaches and a personality which will command the respect and attention of adults. The knowledge of the psychology of childhood will be of slight importance to him compared to its value to teachers of the public school, but his efficiency will be in direct ratio to his understanding and application of the underlying principles of teaching, which should not be difficult to master for one who has technical skill to begin with, and whose work will be with adult students.

The day has passed in which the position of teacher in the public schools could be filled by any one who was more or less familiar with the subjects to be taught and had muscle enough to maintain order. A decade has seen a great difference in the standards required of teachers, for today their training is quite as strenuous as that for any other profession and contains little but training in the art and science of teaching, the students being taught only incidentally the scholastic subjects they are to teach, as the conditions of admission to many modern normal schools include that knowledge as a requirement before entering upon training, tho especial training in the manual arts and domestic science may be given. No longer is a college graduate with no special training assumed to be completely trained for teaching. A visitor to any of the great teachers' training schools will find college presidents, school superintendents, supervisors and teachers of all grades from the kindergarten to the highest university classes doing special work in university subjects. Middle aged and gray haired men and women after years of experience as teachers find they must do this to keep abreast of the latest and best in their profession; hence the adult workman will not be considered a curiosity in the summer classes of any teachers' training school, or in the other classes for that matter.

The qualifications of a teacher may be considered under two heads, personality and education, and neither one without the other in goodly degree will suffice to please a school superintendent. The registration blank of a teachers' agency enters exhaustively into a candidate's personality, education

and record, tho at present we are interested only in the two first.

Personality involves habits of dress, speech, tastes, pastimes, social affiliations; even so mild a vice as smoking may be the deciding factor between two applicants for the same position. Every teacher must be able to meet people of education and culture as an equal, and to discuss intelligently the topics in which such people are interested.

The prospective teacher of the manual arts who has completed high school work beside his trade equipment will have a satisfactory education to present to most school boards, and should be able to pass the examinations for the position of teacher of the manual arts. A man who speaks and writes good English, expresses himself clearly, is evidently a man

The workman who wishes to become a teacher of the manual arts will find that the surest way to accomplish that end will be to matriculate for a year at a school of education as a special student. With this training and the facilities open to students of such schools he should have little difficulty in securing a good position. From this beginning by schoolroom experience, study and summer school work, he may attain any position within the range of his ambition and ability. The prestige of such a training is a decided advantage as often it is the means of placing a teacher at a much higher salary to begin with than if the position came thru an agency, and there will be no commission to pay.

Perhaps a workman cannot afford to lay off a year but would gladly study privately or with the



A TYPICAL VOCATIONAL-TEACHER TRAINING CLASS.
The 1918-19 Evening Class at the Springfield, Mass., Vocational School.

of intelligence and force, and has had successful teaching experience, or special work in preparation for teaching, will not be likely to be turned down because of the lack of academic culture implied by a collegiate degree. If an applicant's personality is pleasing and his technical attainments exceptional, which is usually true of a workman, they will in most cases outweigh many deficiencies in abstract scholasticism.

There is no doubt that a collegiate degree after a candidate's name is a fetich to which many boards of education will kowtow; often the same rule is applied to all teachers whether of academic or mechanical departments, but in case of a teacher of the manual arts the interpretation of the rule is elastic, and many of the most important positions in manual and vocational training are held by men with no letters after their names. Pupils respect a teacher of hand work who knows his subject in all its aspects regardless of scholastic attainments.

assistance of a tutor; such a man may review scholastic subjects, using only current textbooks, he may study freehand and mechanical drawing and design, and visit manual arts classes for the purpose of observing closely the methods of successful teachers. He may work out a series of projects from suggestions by established teachers, or gleaned from educational papers, and by reading, and the study of psychology and the theory of teaching; and by attending summer school as the last step of the process he may prepare himself to fill a modest position. In such a case the work in the summer school should be arranged to include psychology, pedagogy, drawing and design, and shop work in which he could select any branches of wood or metal working or other of the manual arts which appeal to him or were available. With the skill already possessed, his work should compare so favorably with that of his classmates that he would stand an excellent chance to land a position.

It would be within the range of possibilities for

a capable workman of pleasing personality, with a good command of English, to obtain a position without going to summer school, as study and observation, in addition to professional skill, would be acceptable to some school board; the start in such a position would be the stepping stone to something better as experience means a record of some sort, and a teacher's record is his capital. Many teachers' agencies will register such a candidate, and he will stand a good chance to be placed if the manager is convinced that he can deliver the goods. Both the manager of the agency and the board of education hope to find an uncut diamond, one to exploit for a larger position and another commission, the other to fill a vacancy with a good man who only wants an opportunity to prove it, at a low price. There is danger that such a candidate will over-estimate the value of his professional skill and under-value the importance of pedagogical method, and hold himself at a prohibitive figure which would be unwise as school boards paying no more than a moderate salary are very apt to require a record. Hence the candidate must be prepared to make concessions for the sake of getting a start.

Numerous books have been written dealing with all phases of pedagogy and psychology which have been investigated at the present time, and the student can find plenty of authoritative material upon any subject in which he may be interested.

A man of capable mind and earnest purpose can gather a great deal from books, depending entirely upon the thoroughness with which he applies himself and thinks out the material presented. He should at least gain a fair working knowledge of psychology and the theory of teaching. If current reading, observation and study are maintained, and the essentials of several good books are well digested there will be ample work for a busy man for two years. Beside books the current reading of the student should include at least one general educational magazine and one especially devoted to the manual arts and vocational education.

An associate membership in a club of teachers of the manual arts will give the prospective teacher a circle of acquaintances which may easily result in opportunities to assist or to substitute, and will at least provide facilities for observation, and the privilege of friendly advice, and may prove the entering wedge to a permanent position. In the case of a workman breaking into teaching there are obstacles to be surmounted the same as in doing anything worth while, but if he wants to enter school work badly enough to pay the price in hard work and time, and has confidence in himself and determination to succeed, he will win out against seemingly insurmountable difficulties.

ABOUT TOYS

John T. Lemos, Art Department, San Francisco
Polytechnic High School



TOYS, War, and Thrift—a combination that makes the young craftsman sit up and take notice. Along with other shortages will come a decided shrinking of good old Santa's Christmas knapsack, unless the ever inventive American genius comes to his rescue. With the toys comes the Thrift idea. Toys we must have and should have, but certainly not the kind that are going to tax the already overcrowded time of our skilled mechanics, or help use up our war supply of metals. War surely does change the order of events.

Germany boasted of her toy industry in the pre-war days and reaped a bountiful harvest from it. But those days are ended. From the looks of the market, Japan is making strenuous effort to capture the much coveted toy-trade plum. If present indications are not incorrect, the good old United States will step in and take care of this toy business herself.

Already, we find manufacturers who are planning the production of dolls that will be a master stroke in toy making, and others are laying plans likewise.

For the crafts teacher, what could be more interesting than that of having the students work out some of their own Xmas toy gifts? Such toys

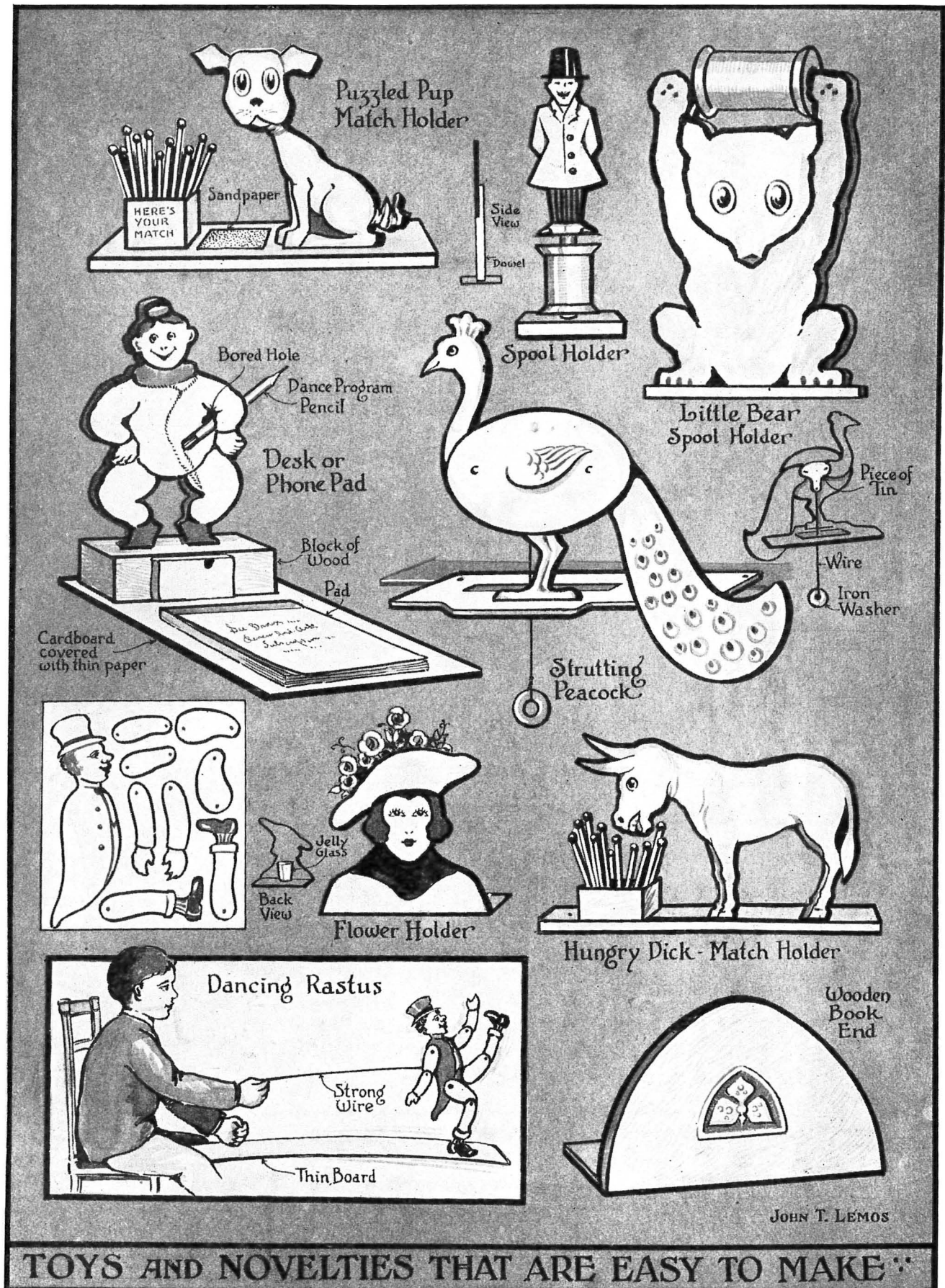
certainly will be appreciated, having the added charm of the artist's personality worked into his gifts.

Toys of wood that are simple, easy to make, and *more or less* bound to last, are the kind that will always be popular. I say this last advisedly, as the man who has invented the toy that will permanently resist the inroads of youthful activities, still remains to be discovered but, at any rate, the wooden toy is always fairly cheap and is fairly tough besides.

Schools having woodwork shops would have no trouble producing such toys as are shown in the accompanying illustration. Three-ply elm, basswood, poplar and sugar pine are all good. Basswood has the quality of being easy to manipulate, but will not stand the wear and tear as will elm or maple.

The wood which is to be used should be surfaced smooth on both sides before anything else is done to it. Most of the wood obtained at the lumber mills is already in this condition.

Where the craftsman wishes to turn out quite a number of duplicates, the best plan is to first sketch and cut out a pattern from stiff cardboard. The wood to be cut out can then be tacked together in tiers or layers containing from three to six pieces. These



can all be cut out at once, saving considerable extra work.

After the toy shapes are cut out they should all be well filed and sandpapered to eliminate any rough or fuzzy edges. After this is done, a first or priming coat should be put over the whole surface of the wood, both front and back. This will insure much better painting in the finished product. After this first coat is dry, the toy design can be traced onto the wood by means of graphite tracing paper.

If the cardboard pattern is not *too* thick, the design can be placed over the graphite tracing paper and traced onto the wood. The toy is then ready for painting.

While ordinary inside oil paint may be used for painting, the best results are obtained from using such paints as carriage paint or any of the many paint enamels on the market. These dry with a high gloss and give the toy a snappy, finished appearance. Toys painted with these enamels are also easier to keep clean. Care should be taken not to have the paint too thick or to put too much on the brush. The paint should be rubbed in well. Putting on too thick a layer at a time will result in the paint drying with bubbles or wrinkles. It is much better to put on two thin coats, if necessary, rather than one heavy, sticky looking one.

In many cases where just an ordinary stain is needed, as for instance, on the base of the toys or some of the less important parts, the wood may be stained with ordinary dyes. In places where large quantities of toys are being painted, this scheme would result in considerable saving of expense.

If the toys are such that they contain various parts which must be assembled together, this should be done, if possible, before the painting. There are cases where it is necessary to paint the parts before putting the toy together, but in most cases just the reverse is true. The toys should be tacked together with small brads or finishing nails where they need the most reinforcing. Any liquid glue can be used to a great extent, and when properly used, saves a great deal of time. In smaller parts where glue only is used, the toy should be put aside and allowed to set thoroly before being handled.

In all these manipulations, particularly the painting, the toys are easier to handle if put in cardboard trays, such as the covers of clothing boxes, shoe boxes, etc. These can then be carried around at will and kept in groups. When drying, the trays can be placed on shelves and changed around in any way needed.

Toys requiring wheels, pulleys, etc., can be made by using spools, or sections of spools and old broom handles. Short pieces of wire, and strips of tin from "nabisco" or other boxes all come in handy in making toys. For wagon axles, etc., dowels which will fit inside of the spools are best. In some cases where no dowels are readily available, a piece of lead pencil

may be used. Odds and ends, old clock wheels and springs, corks, tin cans, and innumerable other things all come in handy.

For schools that have no woodworking possibilities, a pretty fair toy can be made of thick cardboard. These can be laid on a piece of hard wood and cut out with a sharp knife. Before breaking the cut sections apart, the cardboard should be turned over to see if the knife has cut clear thru. Failure to do this will result in a ragged edge on the toy.

Toys made of cardboard can be painted with oils in the same manner as the wood. The tendency of the cardboard will be to absorb more of the paint than the wood, but the priming coat which is put on will take care of this feature. Some toys may be made part wood and part cardboard, if necessary. Some of the most popular toys on the market are made in this way. The cardboard for these toys may be obtained from any paper supply house, or salvaged from old cardboard boxes, backs of drawing or writing pads, etc.

In classes where the students are too young to be trusted with oil paints, the toys may be painted in water colors. The colors should be used with but little water so as to avoid any tendency to spread. The colors will then go on easily. After the toy is painted, a coat of shellac can be put over the water color. This helps to make the toy firmer and more serviceable, as well as more brilliant.

Closely related to toys, we have such gifts as the book-ends, match holders, spool and twine holders shown in the illustration. The little boxes for the matches can easily be made from cardboard strips. The holders for the spools were made from ordinary wire finishing nails. Old chalk boxes, cigar boxes, and even cardboard stationery boxes all come in handy as containers for cord and twine. The backs of the book-ends were lined with a substance known as "fabrikoid," which closely resembles leather. It can be purchased at most large furniture houses and is fairly cheap. Ordinary cloth or scraps of silk could be used, or the wood simply painted or stained on the back.

Such gifts are both useful and unique and with any kind of care will last a good long time. None of them are expensive to produce. In all cases the toys or novelties should be painted in flat, simple tones. Attempts at modeling and naturalistic effects not only spoil their decorative qualities, but also are difficult to execute.

The students of Polytechnic High School in San Francisco recently produced a series of toys, similar to those in the illustration, with most pleasing results. These toys, when finished, were donated to the Red Cross for sale in their Christmas Gift Shops. Everyone expressed surprise that such clever toys could be made with such little expense. Each year sees Uncle Sam swinging into place as a competitor in almost every industry, and who knows but that many of our

school students of today may be our toy makers of tomorrow.

Explanation of Toys.

1. *The Pup Match Holder* was made out of basswood $\frac{1}{4}$ of an inch thick. The pups may be painted various colors, as tan, yellow, or white with brown spots, gray, etc. The front only can be painted and the back and edges given a flat tone of gray, lavender or black. Size of pup—three inches high, mounted on a base four inches long. Size of box— $1\frac{1}{2}$ inches square.

2. *Spool Holder*. This little Frenchman was made of wood 3-16" thick and mounted on a dowel rod, $\frac{1}{4}$ of an inch in diameter. He is three inches high and one inch wide. The dowel is notched part way down to allow gluing to the back of the figure. The dowel is then set into a hole bored into the base. To remove or replace the spool simply lift dowel out of the hole and slip the spool into place. He looks well when painted with a cream colored coat, gray-green trousers, and black hat.

3. *The Little Bear* was made of $\frac{1}{4}$ -inch poplar wood. He can be painted reddish brown or white with salmon colored paws. He holds the spool by means of a wire finishing nail which is slipped thru a small hole bored thru his paws. A good size for him is $2\frac{3}{4}$ inches wide and four inches high.

4. The happy clown on the *Desk Pad* was made of 3-16-inch wood and fastened by glue and brads to a block $1\frac{1}{2}$ inches deep, two inches high, and four inches long. The cardboard base is $4\frac{1}{2}$ inches wide and seven inches long. The little man himself is $3\frac{1}{2}$ inches wide and $5\frac{1}{2}$ inches high. A hole was bored beneath his arm to allow slipping in the little pencil. The calendar pad may be omitted and a shallower block of wood used. Good colors for him are red hair, blue or brown coat, and black outlines.

5. *The Strutting Peacock* is an interesting toy. Cut out of 3-16" wood he measures as follows: Body, $3\frac{1}{2} \times 4\frac{1}{2}$ in. diameter; tail, $2\frac{1}{2}$ in. wide and 6 in. long; head and neck $4\frac{1}{2}$ in. long. The important part is to balance the head and tail so as to obtain a free swing. The head and tail are fastened to the body by means of small brads used as pivots. They are also connected by a small piece of tin which in turn is fastened to a

piece of thin wire at the end of which is an iron washer.

When the washer is swung back and forth the head and tail take turns nodding and bowing in a most lifelike manner. The base should be so arranged that it may be put at the edge of a box or table and held down with a couple of tacks or weighted down with books. This will allow free swing for the wire and washer. Good colors are: head, light green, shading to deep blue; body, blue-green; tail, medium blue background with spots of light green and orange.

6. The girl *Flower Holder* was made of $\frac{1}{4}$ -in. wood, eight inches high and nine inches wide. The base was $3\frac{1}{2}$ inches deep. When flowers are placed in the glass or jar in back of her they give her hat a decided Easter effect. Her hat decorations are easily changed. Good colors for her are red and black, old rose and lavender or light blue and black.

7. *Hungry Dick* looks as tho he is going to eat the matches, box and all. In spite of his appearance he is a modest little mule, standing only $3\frac{1}{2}$ inches high and five inches long. He was cut out of $\frac{1}{4}$ -in. wood, mounted on a 6-in. base and painted gray, white with green spots, or brown and black.

8. *Dancing 'Rastus* is a toy which may be used to produce a great deal of parlor amusement. He is cut out of 3-16" wood and put together with small wire nails. Into his back a small hole is bored and a piece of stiff wire set into the hole with a little glue. Next procure a thin board such as one of the side strips of an apple box or an ordinary lather's slat. The manipulator sits on one end of this board, as shown, holds 'Rastus in place, and pounds sharply on the board with his free hand. By allowing 'Rastus' feet to just touch the board as it is being pounded, a series of the most amazing jigs and contortions will be found to result.

The wire and manipulator could be hidden by a cloth curtain stretched across two chairs.

9. The little wooden *Book Ends* were made of $\frac{1}{2}$ " wood and cut $4\frac{1}{2}$ inches high and $5\frac{3}{4}$ inches wide. The design was $1\frac{1}{2}$ inches each way. It may be painted on, carved in, or cut out of a thin piece of copper and the flower repoussed or etched on. The wood was stained dark oak, mahogany or eucalyptus gray to match the rooms for which they were intended.

Title Page and Index

The annual Title Page and Index to the Industrial Arts Magazine for the year 1918, has been omitted from this issue in accordance with the paper economy program of the War Industries Board. Subscribers who desire to bind their papers may obtain a copy of the Index by addressing a card to the Subscription Department, Industrial Arts Magazine, Milwaukee.

ENGLISH FOR APPRENTICES

R. W. Tarbell and J. J. Metz, Apprentice Instructors,
Central Continuation School, Milwaukee, Wis.



At a time when school boards thruout the country are dropping certain foreign languages from the curriculum, the study of English is receiving special emphasis. More and more it is being brought home to us that, "One Flag, One Allegiance, One Country," depend very much on one language. Increasing effort is being made to make our common tongue the medium of speech by native and immigrant alike.

For years past there has been criticism concerning the English teaching in our public schools. The professor at college says the new students murder the language. The business man says the high school graduates cannot spell. The consensus of opinion seems to be that more attention should be given to this important subject.

This article will attempt to show what may be done to improve the use of English, among boys learning a trade.

Let us consider briefly the status of the average boy, starting to learn a trade, and take an invoice of his language stock. His common school training may have stopped at the fifth grade, or he may be a high school graduate. In the aggregate he will average about the seventh or eighth grade. He has been out of the elementary school from six months to three years, before becoming an apprentice, during which time he may have entirely discontinued his education. His meager supply of writing, good grammar, etc., falls into disuse and is forgotten. As a consequence, the entrance test, given apprentices upon entering school, shows up rather poorly. Many words are misspelled, capitals are omitted, commas missing or generously inserted, periods are forgotten, and scarcely any constructive ability is shown in sentence building.

The above must not be taken as an arraignment of the graded school. It is merely said to point out a condition, which exists among a large number of young men, who leave school at an early age to enter industry.

Now then, granting the situation, let us proceed to meet it. How can boys be taught English, so they will retain it? What kind of lesson will arouse their interest to activity, and what method may be followed to present the subject matter to pupils of different grades?

Our classes are composed of boys from different trades, who are serving their time in local shops, and come to school once a week. Their ages run from 16 to 24 years, and academic training varies greatly. After teaching these young men for several years, we humbly beg to present our experience, hoping it may help others out of some difficulties.

Usually it is not wise to teach English from a text.

Bookwork is dry for the average shop boy, and a feeling of oppression will dull his energy. Books were laid aside when he went to work, and he heaved a sigh of relief at the thought of "no more books, no more school." After experiencing a new sense of freedom in the atmosphere of the shop, where tests and teachers are forgotten, it is doubly irksome for him to attempt again a mastery of the printed page. With this situation in mind, it becomes essential to attack the problem in a different way.

When apprentices enter our department, they are given a preliminary examination, to determine their fitness and preparation for school work. As a result of this quiz we are enabled to advance some pupils, while others must start at the beginning. One part of the test involves a knowledge of English, such as spelling, sentence structure and the like. The boys are then assigned work in shop arithmetic, drawing and other subjects.

English now becomes a part of every school activity. When a pupil in arithmetic class says, "I don't get wise to this problem," or, "It don't seem plain to me," we first draw attention to an error in speech, and then clear up the difficulty in mathematics. When in a drafting class we hear the expression, "My pen don't work well," or "My T-square ain't straight," the corrections in grammar go hand in hand with the specific bit of information required. If a few facts are dictated for the apprentice notebook, the writing is observed and errors corrected. Hygiene, civics, safety instruction, etc., come in for a full share. While talking with the boys at noon hour, before classes begin, we exercise the privilege, which we deem our right, of correcting errors in speech. Thus, the plan is to follow up the members, insisting on good habits of speech and writing, believing that final results will justify the means.

So far we have considered English from a secondary standpoint. Let us now explain the method of teaching the subject *per se*, as a primary objective. We have found our schedule so divided that not more than 30 or 40 minutes may be conveniently allotted to an English lesson. The first essential in teaching any subject is to arouse the interest of the pupils, and so in this work the start may be a statement that two or three errors in speech have been noted and a discussion follows. It is surprising to see the interest taken in an explanation of the proper use of "to," and "too," of "in," and "into," and equally familiar words. In these discussions we say almost nothing about adjectives and adverbs, prepositions and conjunctions. Our classes are concerned very little about the technicalities of the language,

or the precise name for each word. They do not need to know how to parse each word in a sentence, nor to conjugate the verbs. It is far more important to

ment in letter writing. A few words of assistance, giving an outline of the material, will be offered by the instructor. Then all the members write the

ENGLISH

FOR

APPRENTICES & SHOP MEN.
LEARN TO SPEAK & WRITE CORRECTLY.
NOTE THE FOLLOWING WORDS AND THEIR USES

SUBJECTS OF SENTENCES.

I, WE, SHE, HE, THEY.

I AM GOING TO TOWN.
I SAW AN AUTOMOBILE YESTERDAY.
I WAS HURT WHILE WORKING.
WE WILL START TOMORROW.
YOU SAID WE SHOULD COME.
HE IS WORKING IN OUR SHOP.
HE AND SHE ARE ILL.
THEY SAID THEY WERE OUT.
THEY ARE SENDING OUR MAIL.

I WILL BE A MACHINIST SOME DAY.
I AM ATTENDING NIGHT SCHOOL.
I BROUGHT A LUNCH WITH ME.
WE ARE MOVING THIS WEEK.
ARE WE TO GO ALSO?
HE LOANED THIS FILE TO ME.
SHE IS KNITTING A SWEATER.
THEY WILL COME NEXT WEEK.
THEY ASKED IF WE COULD COME.

PRONOUNS.

ME, US, HIM, HER, THEM.

HE TOLD ME TO GO TO WORK.
THEY SENT US TO TOWN.
I SAW HIM WALKING WITH HER.
WE SENT THE PAPER TO THEM.
I WANT THEM TO COME.
THEY SAW HIM AND HER WITH ME.

DID YOU SEE ME LEAVE THE CAR?
YOU ASKED US IF WE COULD COME.
TELL HIM I AM READY TO GO.
WILL YOU SEND THIS BOOK TO HER?
I TOLD THEM OF MY APPOINTMENT.
WE WENT TO VISIT THEM.

SINGULAR FORMS.

ONE, EACH, EITHER, NEITHER, ANYONE, EVERYONE,
NO ONE, SOME ONE, ANYBODY, NOBODY, SOMEBODY, EVERYBODY, A PERSON.

ONE MAN CAN DO THE WORK.
EACH WINDOW HAS A LOCK.
EITHER TOOL WILL DO THE JOB.
ANYONE CAN LEARN TO RIDE.
EVERY ONE OF THE WORDS IN THE ABOVE LIST IS SINGULAR.
NO ONE CAN ESCAPE PUNISHMENT.
ANYBODY IS WELCOME TO COME.
NOBODY HAS BEEN DISCHARGED.
SOMEBODY WILL ANSWER THE SIGNAL.
EVERYBODY IS EXPECTED TO CELEBRATE.
A PERSON CAN FIND OUT BY ASKING.
NEITHER BOY IS OLD ENOUGH.

ONE OF YOUR LOT IS TO BE CHOSEN.
EACH MEMBER IS ALLOWED TO VOTE.
EITHER BOY IS OLD ENOUGH TO LEARN.
NEITHER GUN IS IN GOOD CONDITION.
HAS ANYONE A NEWSPAPER?
EVERYONE IS SUBJECT TO CALL.
NO ONE IS ASKED TO SUBSCRIBE.
ANYBODY IS ENTITLED TO TRY.
NOBODY HAS BEEN SELECTED.
SOMEBODY HAS BROKEN A WINDOW.
EVERYBODY HAS BEEN INVITED.
A PERSON IS EXPECTED TO KNOW HIS WAY.

PLURAL FORMS.

WE, YOU, THEY, ARE, WERE.

WE ARE ON THE MARCH.
WE WENT TO THE THEATER.
YOU WERE SICK YESTERDAY.
YOU ARE TO BE CHOSEN.
THEY WILL SEND AN ANSWER SOON.
ARE THESE THE MEN?
WERE YOU WITH THEM?
NOTE:- THE WORD 'YOU' TAKES A PLURAL FORM.

WE ARE ON LEAVE OF ABSENCE.
WE WILL COME OVER TOMORROW.
YOU HAVE BEEN CHOSEN CAPTAIN.
YOU MUST ALL WORK QUICKLY.
THEY ARE EXPECTED TO COME.
THEY ARE IN THE CAMPS.
WE WERE RIDING WITH HIM.

One of Four Charts which the Authors have devised for illustrating Grammatical Principles.

know how to read and write ordinary sentences.

Again, the lesson may be an assignment for written work. The class will receive a preliminary explanation about some topic, and then be asked to write upon it. Thus, the work may be an assign-

letter, which may be a personal message to a friend, a complaint concerning goods, or an application for a position. The writing may be a description of some shop process, with which the boys are familiar. The main idea is to get the pupils into the habit of think-

ing, and to enable them to express their thoughts in a constructive manner.

Let us look at some of the work as it is collected at the close of class. Here is one paper with the title written incorrectly, followed by three or four lines, rather poorly spelled. Capitals are omitted, while commas and periods are misplaced. All the coaching, which the instructor found time to give during the period, proved insufficient. The boy was unable to write the lesson. This pointed out the poor scholars to the teacher, as well as to the pupils themselves, and served as a basis for future work. Another letter shows an improvement, while still others, written by older or more advanced boys, are quite readable. These papers are marked and returned at the next class period. If necessary, the work is rewritten.

We believe it is quite essential for the instructor to do a little drudgery at times. No matter how tiresome it may become, all the papers should be carefully corrected and returned. A little while should then be taken to explain to each one wherein he made mistakes, and to give assistance in making improvements.

It appears that successful teaching in this, as in other subjects, requires keen observation on the part of the instructor, to find out just where the pupils are weak, which discovery must be followed by help of the proper kind. Many boys have plenty of thoughts on a subject, and can talk glibly about it, but cannot get started to write. Here, then, is where real assistance is most appreciated, and, after a few attempts, the effort bears fruit.

At the beginning we said books were not used in these classes. But it is impossible for boys to remember all they are told about a subject. Some means of reference is desirable, so that a standard of knowledge may be maintained. A simple method for keeping essentials before a class, ready for instant use, is

to have a chart hanging on the wall, giving the desired information. Pupils can use this and check up their own ideas with it. When a boy makes a mistake he may be sent to the chart for correction. Apprentices are often noticed consulting these charts, discussing points, or correcting one another during the noon hour.

The accompanying cut was made from a chart hanging in one of our classrooms. It does not lay so much stress on the technical side of grammar, but instead, shows how to use certain words. When we hear a pupil speak incorrectly, a trip to one of these charts will correct his mistakes, and eventually, teach him the proper usage. It is quite common to hear the boys using "everybody," with the plural form of verb, until a trip to this sheet shows it to be singular.

Sometimes an entire English lesson is based on a page of this kind. The class is given a number of words and told to construct a variety of sentences, using these forms as a guide. This requires close scrutiny on the part of each member and, incidentally, many other useful facts will be discovered.

Now, the question is sometimes asked, "Why teach apprentices English?" and this may be a good place to answer it. If for no other reason, the shop man needs a good working knowledge of the language, to be a good mechanic. Many journeymen are handicapped today, because they cannot write up the necessary shop reports, nor apply for a job by mail. Many a man could advance more rapidly, if he had developed the power of expression during his school days. A good English training would enable these men to write correctly and talk convincingly. Also, we believe a better knowledge of his own language will very effectually broaden the mental horizon of each young mechanic, and eliminate much that may prove harmful to himself and society in later years.

PRINTING.

Printing, like all other great phases of art, was born of necessity and nurtured in adversity; yet the master abilities of the early printers are proven by the fact that their works still survive; yea, serve as the goal of excellence to be attained by present-day craftsmen.

Printing is a practical art. Its products are used to disseminate thought thruout the entire world.

Printing in its finished state combines all the essentials of education—cultural and practical.

Printing is the best method of self-expression in school work. As a means of developing the motor and sensory faculties of children there is no better manual subject.

Printing is the one vehicle that carries information of all the arts and sciences.—F. K. Phillips.

WAR TIME ACTIVITIES IN THE SCHOOLS

Bonnie E. Snow and Hugo B. Froehlich

"This war may be discouraging—
I'll think about that later,
I must be cheerful, now, because
A pessimist's a traitor!"



So chants the Cheerful Cherub! And those of us who would fain cultivate a habit of cheerfulness under the trying conditions of the War know that there is no better way of doing it than by being actively helpful to those in distress. The children feel the stimulus of real service, in these war time activities, and thru the working out of the problems

V. A HOSPITAL LIBRARY.

Much reading matter in various forms has been sent into our cantonments and hospitals, tho the amount of such material sent abroad must necessarily be limited. The school children have made scrap-books, joke books and story books galore. Probably the most sensible and the most welcome of all these gifts of handbound books to the boys in camp resulted in the use that a certain teacher made of her three years' file of The Geographic Magazine. The quality of the illustrations and of the printed texts in this

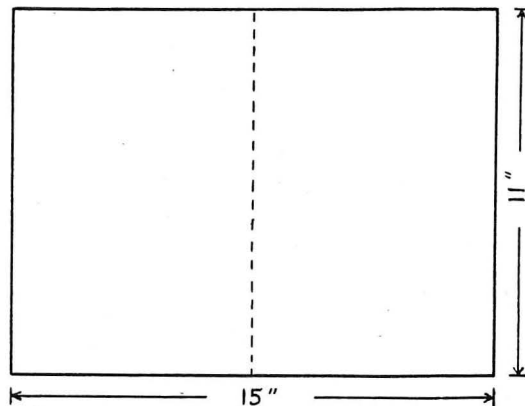


Fig. 19. Craft Paper Cut to Size for Cover

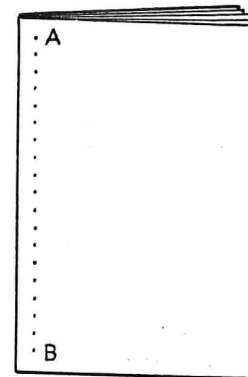


Fig. 20. Booklet Placed Within Cover Ready for Stitching.

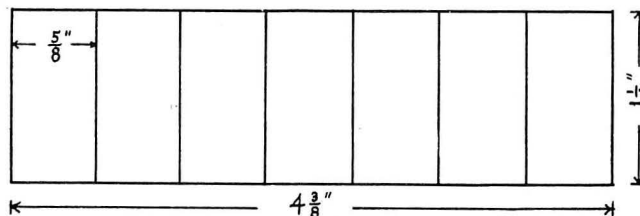


Fig. 21. Rectangles of Paper Planned for Cutting Title of Booklet

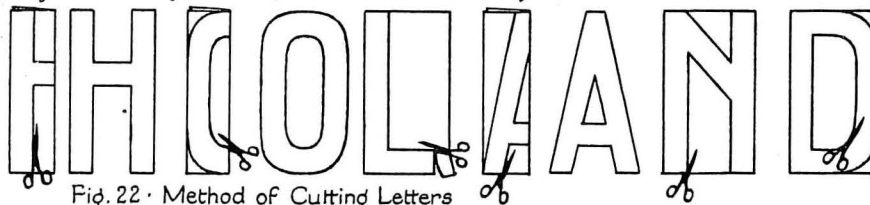


Fig. 22. Method of Cutting Letters

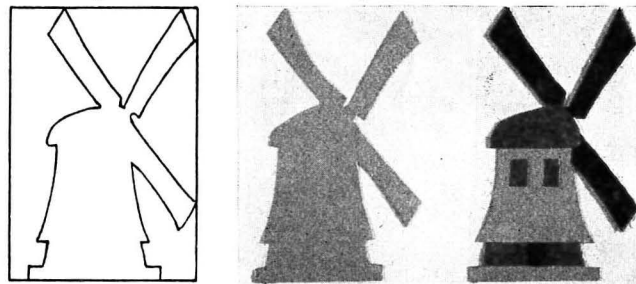


Fig. 23
Method of Cutting
a Design Unit

in this series we can often put the educational principle across. The boys who are sick in hospital, or who are enduring the tedious days of convalescence, will be cheered and entertained should they receive the simple gifts that form the basis of our next two problems.

publication are too well known to need additional commendation here. The teacher had saved every number that had come to her, thinking some time to have them bound in volumes for her own library. But this, she thought, would be a personal and some-

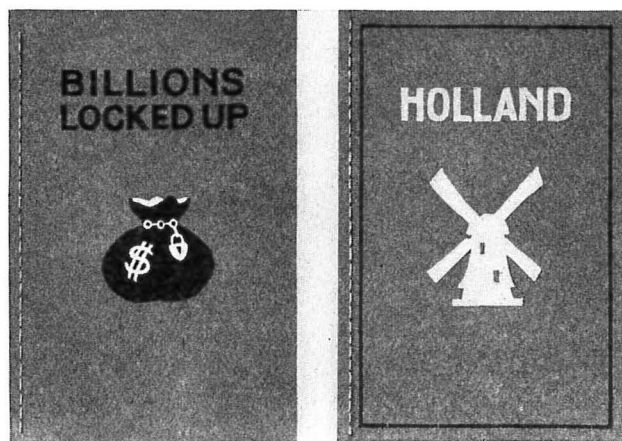


Fig. 18. Booklets for a Hospital Library.

what selfish use to make of such highly interesting material. The pictures in the magazines were of a character to interest a soldier who had travelled perhaps in the very countries so graphically portrayed. The texts were descriptive of the pictures, and furnished much valuable information as to actual conditions in the various countries of the world. Many of the illustrations were in color, as for example, the beautiful plates which showed the flags of all nations, the series on the wild flowers of North America, and the no less attractive and valuable articles on birds. There were also the articles illustrated by color plates on Washington, New York, and other cities. How rich a contribution such a library would be to any hospital in war times or in peace!

Remembering that for a sick man a magazine in toto is heavy to hold in reading position, and that the temptation to read too much may not be resisted, the teacher decided to separate each number of the "Geographic" into its signatures, or sections, binding only one article into a booklet. Accordingly, the wire staples were removed from all magazines. This was done by the aid of pliers. A large number of units, each containing a complete article, were thus secured.



Fig. 24. An Open Volume of the Hospital Library.

The process of binding these articles was very simple. A piece of craft wrapping paper, cut 11x15 inches, was folded in the middle, as shown in Fig. 19. One-half inch in from the folded edge, a vertical line was ruled from top to bottom of the cover. Upon this line, dots were placed, one-half inch apart (Fig. 20). The section to be bound was fitted carefully into this folded cover. A needle and stout thread (the latter about four times as long as the cover was high) was then passed thru the dots, and also thru the pages of the signature, beginning at or near the middle dot, sewing up on the front side of the cover and then down on the back to the starting place, then down on the front and up on the back, fastening the thread to the beginning knot. Sewing done in this way resembles machine stitching. It is quickly accomplished and is strong and durable.

Each student who bound in this way a section of the magazine was asked to plan a title for his booklet, and to add a simple and appropriate decoration. The method used in cutting the letters for the title is illustrated in Figs. 21 and 22. As many rectangles were drawn on paper of selected tone as there were letters in the word or words of the title. For example, Fig. 21 shows seven rectangles, each measuring one and one-fourth by five-eighths inches. These rectangles insure uniform heights and proportionate widths in cutting the letters. Fig. 22 shows the method of cutting the letters. They were then carefully spaced and pasted in place on the cover.

A characteristic decoration was then devised to be used in connection with the title. For "Holland" the windmill seemed an appropriate shape. Fig. 23 shows the sketch, the cut-out shape, and various accessories to the main shape cut from contrasting values of paper. Fig. 18 shows the "Holland" booklet, completed with a ruled marginal line in black crayon.

"BILLIONS LOCKED UP" shows another style of title and decoration used on the cover of another article. Fig. 24 shows an open volume of the Hospital Library.

The number and variety of "volumes" that resulted from the use of this most interesting file of

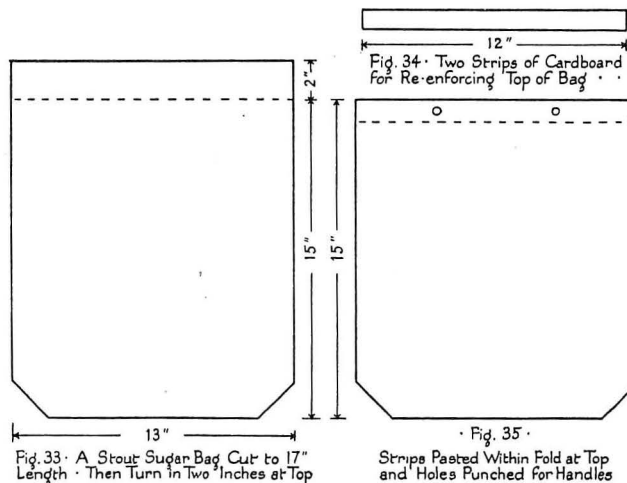


Fig. 33. A Stout Sugar Bag Cut to 17" Length. Then Turn in Two Inches at Top

Fig. 34. Two Strips of Cardboard for Re-enforcing Top of Bag

Fig. 35. Strips Pasted Within Fold at Top and Holes Punched for Handles

magazines was truly amazing. Was it not better to put this material into convenient and usable form, than to store the magazines in the attic, waiting for an opportunity which perhaps would never come to bind them into heavy volumes? The size and weight of the bound volumes and even of the single numbers of the magazines would prevent to a large extent their use for the purpose we now have most at heart, — cheering the soldiers, and offering for this purpose the best that we have.

VI. A BEDSIDE PROPERTY BAG.

The bedside property bag will hold those belongings of a personal nature which minister directly to the patient's comfort,—the morning paper, the letters from home, a writing pad with pencil, a box of cigarettes. Hung upon the bed-post, or suspended from a convenient drawer-pull or hook, this bag, with its decoration of fine color, will give a sensation of pleasure to the eye that is awearied, and will form a convenient pocket for miscellany, made thus available without the offices of nurse or attendant.



Fig. 32. Bedside Property Bag.

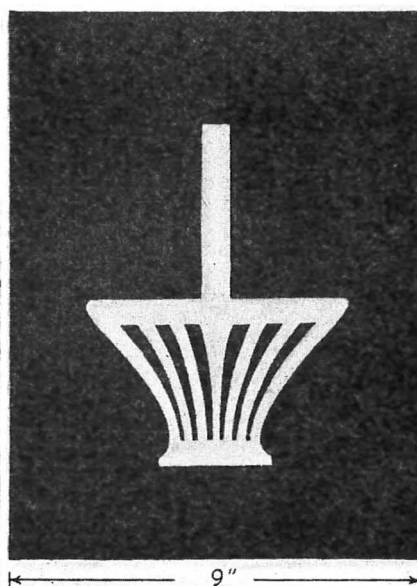


Fig. 38. Basket Shape Pasted on Background of Design . . .

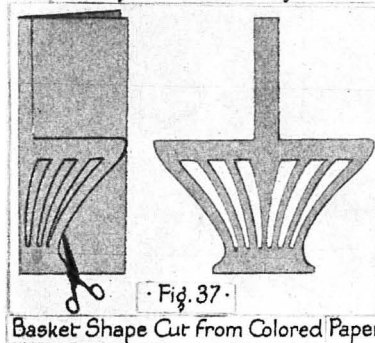


Fig. 37.

Basket Shape Cut From Colored Paper

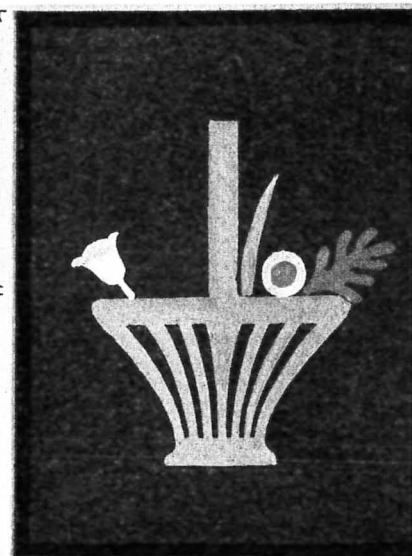


Fig. 40. Method of Arranging Flower Shapes in Basket . . .

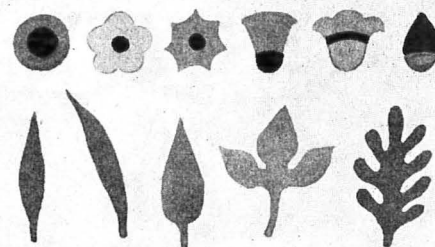


Fig. 39. Suggestions of Flower and Leaf Shapes Cut From Colored Papers . . .

As the bag with its decoration is of paper, its use need not be extended beyond the point when its beauty has departed.

The paper bag "carryall" has been quite the vogue for the past few months, even among those who are not elected to hospital experiences. It has been made a school project, and like the knitted afghan it has been the instrument of serious transgression, for in many cases the decoration has violated a principle of design. The colored cover of a magazine has been pasted on the bag as a decoration, and while this is not in itself objectionable, in nine cases out of ten the cover has been a highly colored pictorial illustration, rather than a decorative arrangement. Unfortunately, the pictorial style prevails in our magazine covers. It is only now and then that we find a cover which is treated from the standpoint of decorative design. For this reason, it is better for the student to plan his own decoration, using the convenient medium of cut paper in expressing his own ideas of color and arrangement.

A photograph of the finished bag is shown in Fig. 32. A new, stout bag of paper, sometimes spoken of as a sugar sack, is selected. These bags may be obtained at trifling cost thru any grocer. The bag, as it comes, will be too long for our purpose and must be cut down to a length of seventeen inches. Two

inches of this length is then to be turned in at the top (Fig. 33). Two strips of cardboard, each cut as long as the bag is wide, and themselves an inch and a quarter in width, are folded and pasted within the hem at the top. Holes are punched in this reinforced hem, about four inches from each side of the bag (Figs. 34 and 35). Thru these holes are passed the handles, which may be of stout tape or of a round cord which in many cases is knitted or knotted on the fingers by the familiar process known as "Idiot's Delight."

Now comes the interesting part of the problem,—the designing of the decoration. Any motif desired may be taken as a basis. A basket of conventional flowers is as simple and suggestive as any. A rectangle of colored paper in some suitable background tone is first cut, in size to allow at least a two-inch margin all around it, when placed in position on the bag. Upon a folded piece of manila or colored paper, the shape of one-half of a basket is sketched. A bi-symmetric basket shape results from cutting the folded

paper on the sketched lines (Fig. 37). This shape is then pasted in position on the background, so that the flower shapes which form the center of interest will be seen above the mathematical center of the background panel (Fig. 38). Various leaf and flower shapes are now cut from colored papers, following out a definite scheme in the choice of colors, and using black and white shapes to give the necessary contrast of dark and light. These shapes are carefully disposed in relation to the basket shape, and are pasted in place. See Figs. 39 and 40.

The pineapple design shown in Fig. 32 was especially attractive in color. An arrangement of dark and light orange shapes appeared against a background of strong blue, with a margin of black. This design mounted on the gray orange tone of the bag was most effective.

Fig. 41 shows the completed flower arrangement, and three other suggestions for designs that afford opportunity for brilliant color schemes.

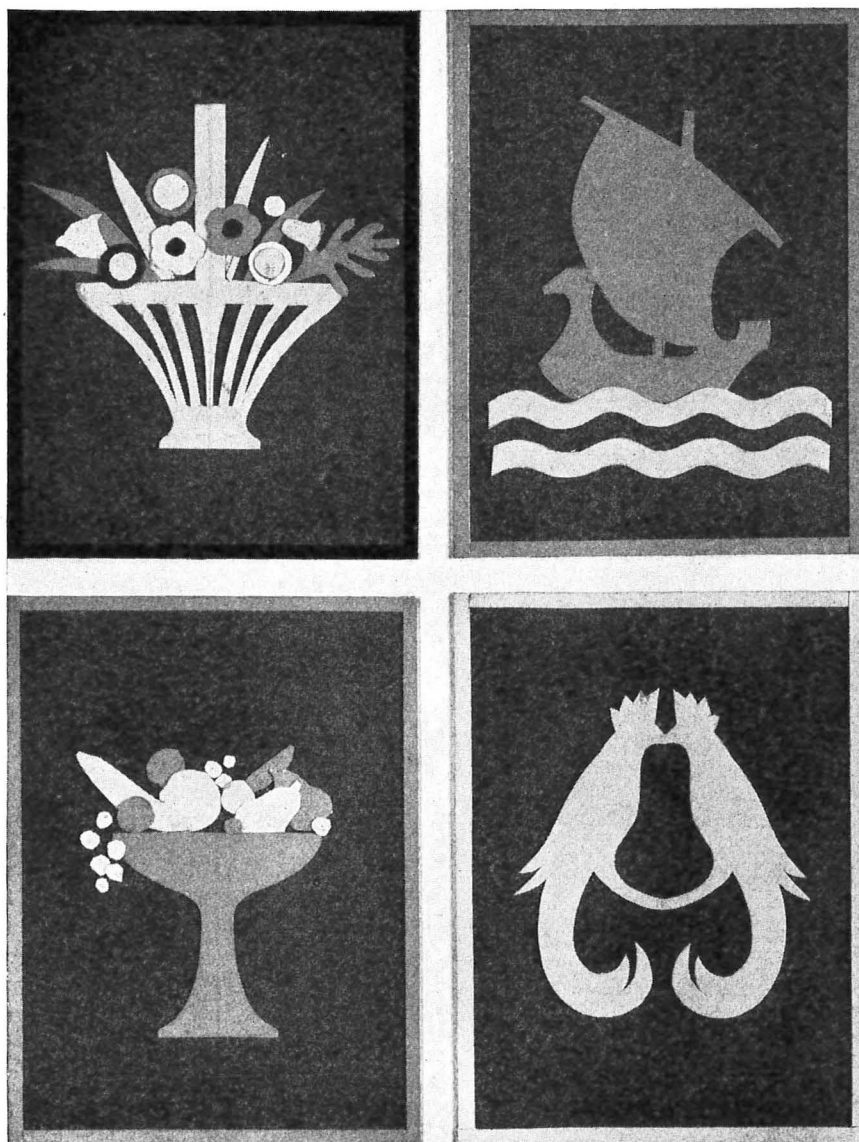


Fig. 41. Suggestions for Designs of Cut Paper for Bedside Property Bags.

THREE CHRISTMAS ACTIVITIES

Royal B. Farnum, Supt. School of Applied and Fine Arts,
Mechanics Institute, Rochester, N. Y.



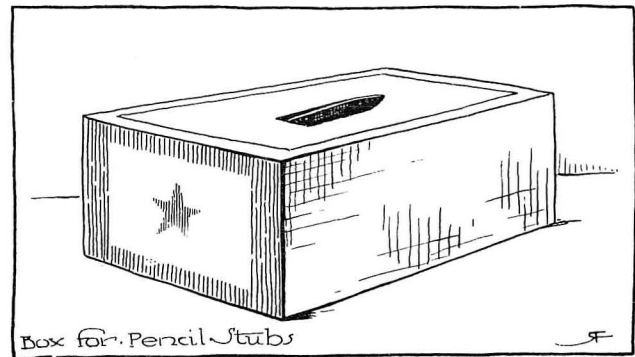
NATURALLY our thoughts are constantly centered upon the great war and when I tried to think of possible Christmas activities for the schools I found it difficult to separate myself from the world struggle. Christmas would mean nothing to you and to me if Kultur reigned supreme. There would be little pleasure in an exchange of gifts if over our heads hung the sword of Prussia. And realizing this we are forced to lend ourselves in both thought and act to the complete suppression of this huge evil.

The main consideration for this year is the inexpensive gift. Certainly pencil stubs come within this class and these usually scorned cast-a-ways are most acceptable to the soldiers.

I. An excellent problem is the making of boxes to hold the stubs and then organizing the children into groups or teams to see who will obtain the greatest number within a certain time. The Red Cross will, I believe, find a place for all such offerings as will be sent to them.

The boxes may be constructed by the children or made from shoe or candy boxes with monochromatic paper or cloth and perforated to admit the pencils. Decorations may be applied utilizing war symbols and the opening may be in the shape of a cross, a shell or a pencil stub itself.

II. A second activity is a Christmas card to be sent to the mothers and wives of the soldiers in the



line border also in color. Simplicity of design is essential to the spirit to be conveyed, consequently elaborate color schemes or over decoration should be studiously avoided.

A simple envelope may be constructed or a plain white one may be obtained and simply decorated.

III. A third Christmas activity also deals with the soldiers. Our boys are training here, are "over there," or are returned to us with that strange new light in their eyes. Wherever they are they delight in our local gossip and home news. While it is of course, really trivial, at the same time the small every day events in the home town, told at length in a voluminous letter, can aid in no small degree toward maintaining that splendid morale and unconquerable spirit they are proving they have.



Suggestion for Christmas Card in color. SF

school neighborhood or in the town. The war is being fought for the next generation, not for this. It is for the benefit of the future. A brief message, similar to the following, will serve to convey this thought from the school children to the mothers and wives whose boys and men have offered their lives in the great cause.

The cards may consist of good lettering slightly illuminated by dots and colored lines, and a simple

Therefore an illustrated composite letter to the "Boys" from the home town or school locality will present an excellent problem. The plan is as follows:

During a given week designate each pupil in the room as a reporter to note each day some event occurring in the community. The notes should be brief but at the same time the complete event should be covered. Such excitement as a runaway, an auto accident, a lost baby, a fire, a patriotic parade, or an

old-fashioned snowstorm are typical. The date and time of day should also be recorded.

The week following the notes should all be read and perhaps two from each pupil should be assigned to those reporting them for writing up. In this particular instance there should be a minimum amount of direction, for imagination and individuality should be sought.

As each event is written a separate sheet of paper should be supplied and with crayon or brush the news should be illustrated. The pupils may be directed in this case to the importance of telling only a single event, and that event or action should be well centered upon the paper.

A LETTER OF HOME EVENTS

REPORTED BY

PATRIOT SCHOOL
ROCHESTER N.Y.

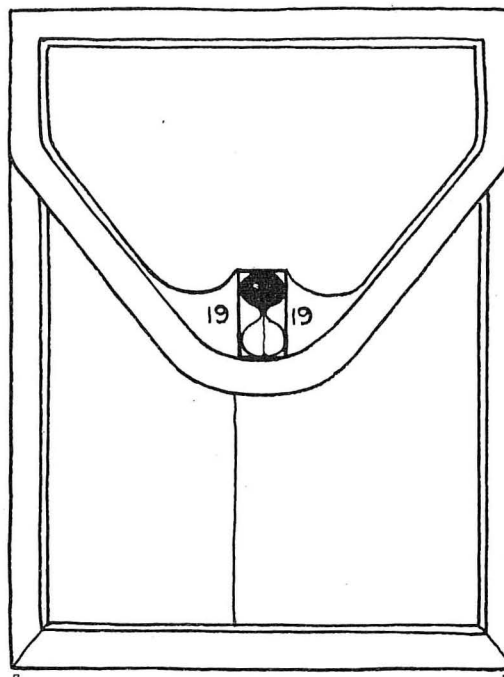
R F

TITLE PAGE

There should be no correction either in the writing or illustration. Any poor spelling, peculiar phrasing or crude drawing will for once not only be acceptable but will be preferred by the "Boys." For who does not delight, upon occasion, in the frank unvarnished mistakes of lively youngsters when grappling with methods of expression.

Each item should be signed only with the initials of the reporter. The first page of the letter, however, should have a statement similar to the following: "A LETTER OF HOME EVENTS — as reported by those listed below, from School, Town, State." Then should follow each name in full. Kodak pictures of the town may be included to advantage. At the top of the first page also should be the statement, "Pass it on to someone from our home town."

For carrying the letter and incidentally offering an excellent problem in decorated handwork a carefully constructed envelope should be prepared. It

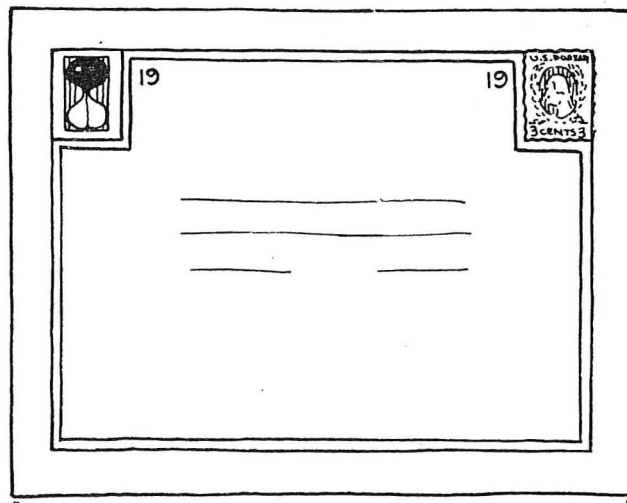


BACK OF ENVELOPE

should, of course, be large enough to contain the total number of written and illustrated news events, and should be made of very tough paper, for, if I am not mistaken, it would be continually passed around and would undergo rough handling.

By the time this is published it will be too late for sending as a Christmas gift but it may well bring the New Year's greeting and therefore a symbolic New Year's decoration can be devised for the envelope. This may be a repeated border or a single unit of design placed on the side or in one corner to balance the stamp. In addition a single line in color may be placed near the outside edge to serve as a margin line.

[Note.—The author would be very grateful for any report on the success of these activities in any community.]



FRONT OF ENVELOPE

TURKEYS FOR SERBIA

Charlotte A. Morton, Director of Household Arts



THE students of the normal school sent a committee to the head of the household arts department. "What can we do," asked the committee, earnestly, "to help Serbia?" They had heard Sergeant Farnum the day before,—an American woman, be-medalled, in Serbian uniform, telling thrilling tales of Serbia's heroic battle fields.

They had heard Mr. Hinkovic, a former member of the Croatian parliament, tell of the great dream of a Yugoslav nation to be formed of Slovenes, Croats, and Serbs, and then tell pitifully, appealingly, how only a third of the former Serbian Nation now remained, to form a nucleus for that state.

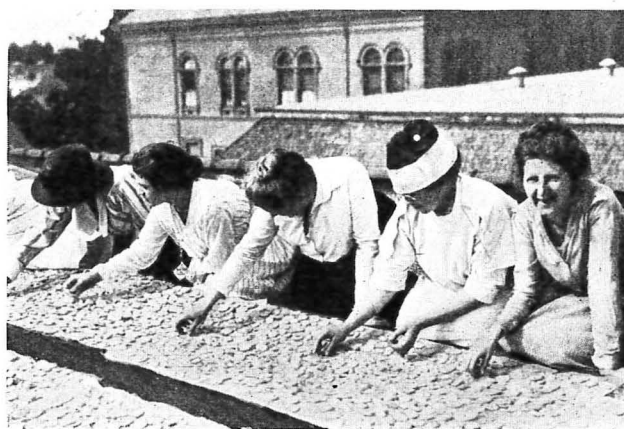
The realization had come to the students that the people of this remaining third were fugitive, destitute, and that everything done for their relief would "really count." And they wanted to *do something!*

Headquarters had been opened the week before in a vacant store near First Avenue. The Serbian flag had been draped in the window and all available literature on Serbia's need placed near the entrance. Certain students spent their study hours here to keep the place open, and a surprising number of people dropped in from time to time, donating money, clothing, and dried foods.

Many of these people had dark eyes and rugged features, and the peculiarly strong, kindly expression that marks the face of the best type of Yugoslavs, distinguishing it from the more sullen look of their Slavic neighbors. If questioned, they would tell of relatives, dear friends, loved ones, in that tortured land, from whom they had not heard for months, who might now be dead,—starved, murdered, but "I give something ana'way. It maybe help other Serbian,"



Students and Instructors formed in groups on the green lawn.



The frames were covered with drying vegetables exposed to the unobstructed rays of the brilliant California sun.

a man would say. Then might ensue a conversation during which there would come to the young student for the first time the blessed knowledge that ideals, faiths, hearts are the same, God's world around. "He seemed just like an American," she would confide later to her roommate, "if you could forget the queer way that he talked."

Besides the opening of the Serbian headquarters, there were the "turkeys for Serbia," a flock of them, which could be seen at any time stalking about the beautiful and hitherto purely ornamental grounds of the school. They had been purchased as the result of a meeting of the faculty, who tried hard to be serious as they debated how the school grounds could be made to do their bit,—whether sheep, rabbits, or fowl would best adorn the grounds during war time, and who should be guardian of the flock. The head of the English department was finally designated as the turkeys' keeper, on account of boyhood experience with that branch of fowldom. The picture of the respected and beloved professor engaged in this occupation caused much merriment. Another member of the faculty was inspired to burst into verse, exclaiming:

"Hail! Henry Meade Bland of the ivory dome,
O'er turfs with the turkeys daily you roam!"

The manual training department made a coop of ornamental design painted in the brilliant Serbian colors, and the cooking classes saved all left-overs and scraps to add as many pounds as possible to the turkeys against the day before Thanksgiving, when they will be sold to the highest bidder, the proceeds going to the fund for Serbian relief.

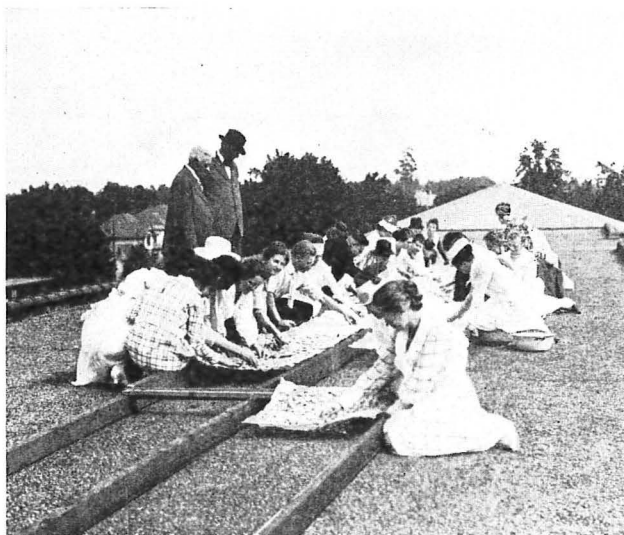
But the students were not satisfied. "We want the *whole school* to do something *together*," they said. "We'll invite everybody to come into the quad,—and then couldn't the household arts department have fruits and vegetables there, enough for us all to cut up and dry to send to the Serbians?"



Students packing the dried fruits and vegetables in tin cans.

Discussions, consideration of difficulties, followed, and finally the enterprise was undertaken. A committee interviewed the local wholesale dealers, asking for donations of fruits and vegetables. Overwhelming results! Crates of cabbage, pecks of potatoes, bushels of beans and other vegetables and fruits then in season, were stacked on the green grass of the quad on the designated day. Each person brought a knife and a newspaper, and as they all gathered in the great inner quad of the normal school, hundreds of students, dignified professors and instructors forming in groups on the green lawn, working together for a great purpose, (relief of suffering) it was an inspiring sight, and gave one a vision of the immense amount of good that can be done by numbers of people co-operating on one enterprise.

Students of the household arts department wore tissue paper caps labelled "Captain Spud," "Capt. Onion," and various other descriptive names, and these captains supplied each group of workers with a square of cheese cloth on which to place the cut up vegetables. As fast as these accumulated, they were transferred to the cooking laboratories by a procession of students

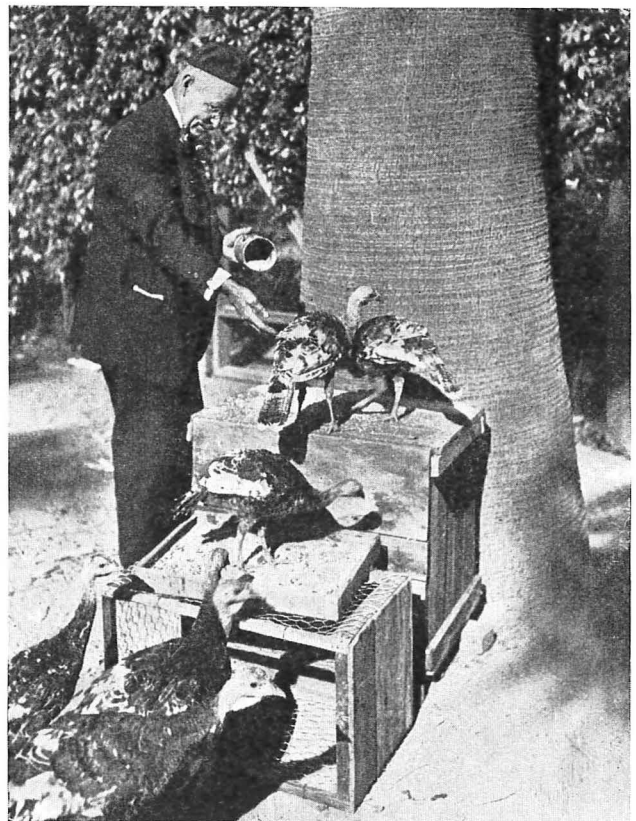


The President and Vice-President of the school climbed to the roof to inspect the drying.

who dipped each square into the kettles of boiling water there provided, holding the square by the corners and parboiling the contents for a few minutes, then proceeding with it up to the flat roof of the main building where frames had been provided. Here groups of students spread out the squares of cheese cloth, until all of the frames were covered with drying vegetables, exposed to the unobstructed rays of the brilliant California sun.

At the close of the afternoon an astonishing amount had been accomplished, and it was with deep satisfaction that the students viewed the results.

A few days later, after the drying was completed, and the products had been tested and found almost as good as fresh, groups of volunteer students sterilized and packed them in tin cans,—all sorts of tin cans, brought in on request. These were then sealed with

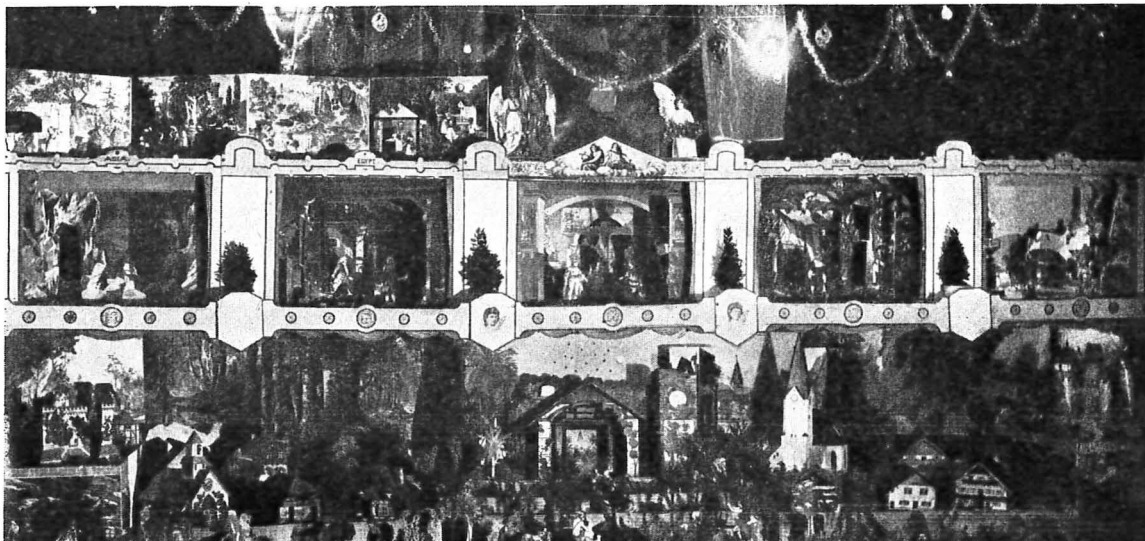


The respected and beloved professor engaged in this occupation caused much merriment.

paper, placed in boxes, and started on their long journey to the Serbian refugees. "It doesn't look like nearly so much now," remarked one student disconsolately. "Oh!" exclaimed another,— "But just think what it will swell up to again when it is cooked."

At the end of the school year, it was found that 128 cans of dried fruits and vegetables, averaging about three pounds to a can, of apples, pears, peaches, apricots, potatoes, cabbages, and onions, had been dried by the students or donated by the townspeople; and \$250 in money had been contributed.

The sale of the turkeys will have been completed when this reaches the reader.



A Most Elaborate Holiday Staging of "Cut-Outs." All houses, trees, foliage of all kinds, animals, people, etc., are created from "cut-outs," including even the dramatic settings.

ELABORATE STAGINGS OF "CUT-OUTS"

Charles Alma Beyers

PAPER "cut-outs" are possible of far more elaborate and lasting forms of entertainment than is generally realized. As usually used, they afford, to small children exclusively, only a few minutes of amusement when they are new, soon being discarded for something else, and perhaps destroyed. But that is because their possibilities are not fully appreciated, by either the children themselves or their parents, for when made the most of they can be utilized as a source of never-ending delight.

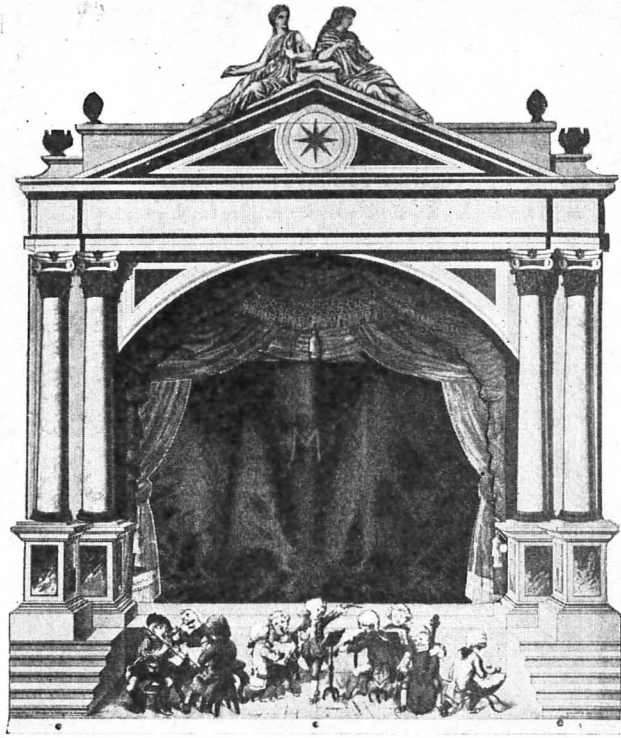
The accompanying illustrations show some of the several very elaborate schemes that have been created from paper "cut-outs" by a man, Elimar E. B. Meinardus, of Los Angeles, California. Mr. Meinardus, with four small children to furnish with amusement on long winter evenings, has collected "cut-outs" for several years from every source imaginable; and, in teaching his children their possibilities, has wrought them into "playthings" that are subject to such a variety of displays as to make them of unending interest. And in watching their father, the children, the oldest of whom is only eight, have become almost as proficient in cutting out pictures and staging the "cut-outs" in new formations as their instructor.

Aside from the usual special "cut-outs," this man has utilized ordinary lithograph and other colored prints from wherever obtainable—perhaps a colored tree print from one source, a house, a church or a section of garden wall from another, and so on. His collection, in fact, embraces trees, plant life, houses and buildings of every description, rock scenes, mountains, landscapes of all kinds, public park statuary, bits of garden architecture, whole menageries of animals, men and women on horseback, soldiers,

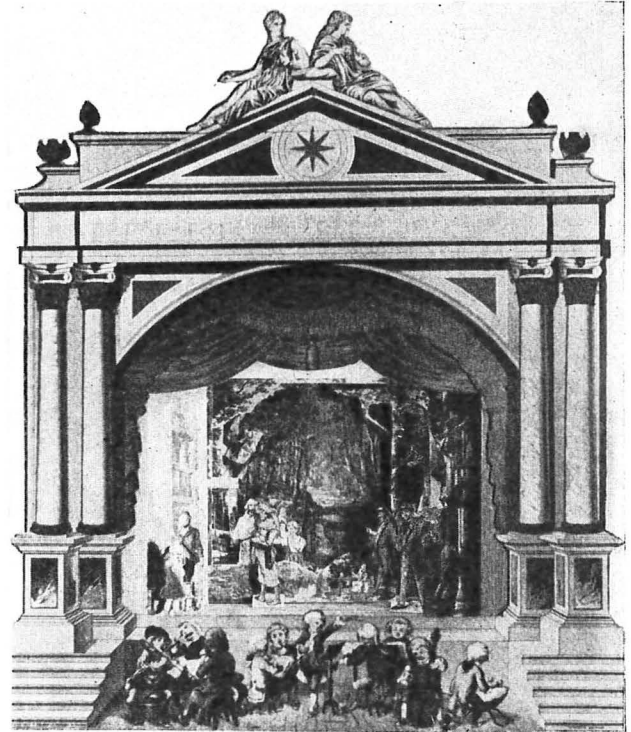
men and women engaged in various occupations, actors and actresses in dramatic attitudes, and so on—until he is able to reproduce or originate almost any scene imaginable. From a large lithograph, for instance, he was able to obtain a print of a bit of Greek architecture, which he has utilized for facing a specially designed frame-work that he uses as a stage. This stage is provided with the usual "wings," likewise created from "cut-out" scenes of suitable



A Christmas Tree in a setting executed from "cut-outs" and a block church.



Stage with curtain down shows "cut-out" drapes.



State set with Forest Scene and with "cut-out" characters.

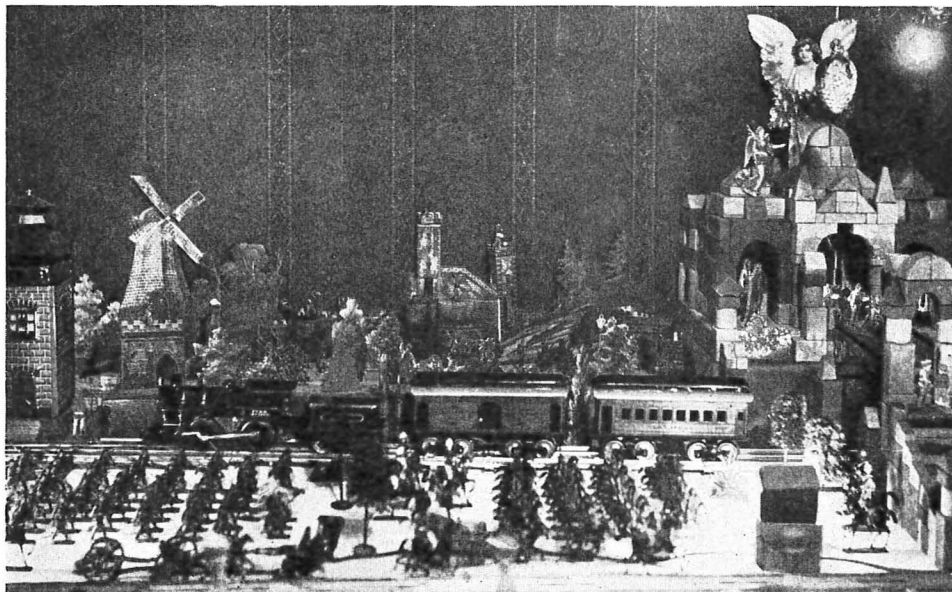
character, which may be changed to suit any setting; and he also has a most complete assortment of characters and the usual stage paraphernalia, with which to create the scenes and acts of several plays. Then, too, he has other collections that he arranges into battle scenes, and so forth.

Where the "cut-outs" have been obtained from ordinary colored prints, it has been necessary to mount or paste them on cardboard, and to equip the ones intended to stand without apparent support with braces at the back. After trimming them, the pictures are pasted on heavy cardboard—the thick-

ness depending on the size of the picture—and then with a fine-toothed mortising saw he cuts away the cardboard to correspond with picture edges. Of course, for trimming the smaller pieces, for which light-weight cardboard is used, a pair of shears is utilized, but the very large ones are usually mounted on heavy binders' board and must be cut with the saw. Suitably colored blank paper is sometimes used to create back-grounds and so forth; and occasionally he finds it necessary to do a little decorating with water-color paints.

Naturally it has taken considerable patience and

perseverance to get together such a collection, but it has been of such slow growth as to make the work seem comparatively slight. For the long evening or the rainy day the "cut-outs" afford the children their most favored form of self-amusement, and usually for Christmas, New Year's, Easter, and the other holidays the father will assist them in something particularly elaborate, as well as appropriate to the occasion. Truly, no toy lends itself to such a variable lot of treatments.



The landscape shown above is created entirely from "cut-outs" with exception of the block house castle and railway toy train.

WAR CARPENTRY IN THE SCHOOLS

Elizabeth M. Heath, Editor, Junior Membership, American Red Cross, Washington, D. C.



CONVALESCENT Yank is recovering—somewhere in the United States,—from a glorious but unhealthy sojourn in Belleau wood. This particular hero is picking up. The sunny stillness of the Red Cross Convalescent House, attached to a Base Hospital,—moves him to contented contemplation.

"Well, the darned little kids!"

That is one side of the story. This is the other. A supervisor of manual training in the Middle West was inspecting one of his schools. On the way to the shop he stepped on a pile of new lumber.

"You don't know it" said the instructor in charge, "but you've just committed a sacrilege."



National exhibit of Red Cross house furnishings and articles made for chapters and U. S. Medical Corps shown at Pittsburgh Conference of National Education Association, July 3, 1918.

"Nice sort of place you got fixed up here," he remarks idly to the matron.

"Like a regular house," he added. He hasn't been inside a regular house since he "went over."

"Yes," answered the matron, "I was surprised myself that the boys could do so well."

"Huh? Boys?" interrogatively.

"Yes, the school boys who made the furniture, the Junior Red Cross, you know."

"Say, you can't kid me, no boys made that table. It's regular stuff. Say, I was born in N'York."

"I'm telling you the truth, Corporal, all these tables and lamps and benches and screens and rugs were made by boys and girls in school. I saw my brother's class making some of them. Those youngsters were all up in the air about making things for real soldiers."

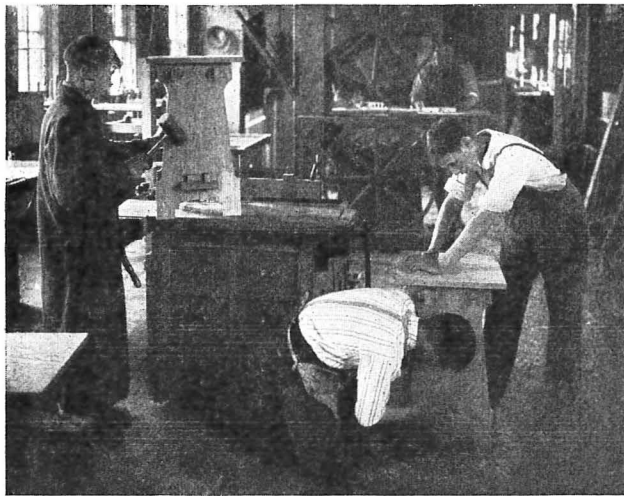
"What do you mean?" asked the supervisor in surprise.

"Those boards you stepped on were sacred. They're going to be made into Red Cross furniture. If my boys were here they'd probably do you up. They wash their hands before they handle it."

That was the first time the supervisor had ever been called down by one of his own teachers. But when he saw the work that the class was turning out he realized the value of that Red Cross dedication.

True to its official duty of military relief, the Junior Red Cross is carpenter not only to the Red Cross but to the U. S. Army as well. Its services may be divided under three heads:

(1) *Work for local Chapters.* This includes furniture for Red Cross workrooms, knitting needles, sock driers, yarn winders, bulletin boards, flag staffs,



Making Red Cross Taborets in an eastern city.

etc. Many a chapter has had its efficiency increased by first-class equipment furnished from manual training shops for the cost of materials.

(2) *Making furniture for Red Cross Convalescent and Nurses' Recreation Houses.* During the past year the Red Cross has been rapidly erecting these

DIVISION ALLOTMENTS, AUGUST 30, 1918, FOR PRODUCTION BY DECEMBER 1, 1918. BOYS' WORK-BUREAU OF JUNIOR MEMBERSHIP A. R. C.

American Red Cross House Furniture

| | 4009—Inkwells | 4005—Wood Screens | 4011—Dressing Tables | 4003—Taborets | 4010—Rugs | 4013—Costumers |
|---------------|---------------|-------------------|----------------------|---------------|----------------------|----------------|
| Atlantic..... | 12 | 8 | 3-B 3-P 3-G | 24 | 6-B 6-P 6-G | 12 |
| Gulf..... | 12 | 8 | 3-B 3-P 3-G | 24 | 6-B 6-P 6-G | 12 |
| Mountain..... | 24 | 16 | | 19 | 12-B 12-G | 5 |
| Potomac..... | 72 | 48 | 18-B 18-P 18-G | 144 | 36-B 36-P 36-G | 72 |
| Southern..... | 36 | 24 | 9-B 9-P 9-G | 72 | 18-B 18-P 18-G | 36 |
| Total..... | 156 | 104 | 96 | 283 | 222 | 137 |

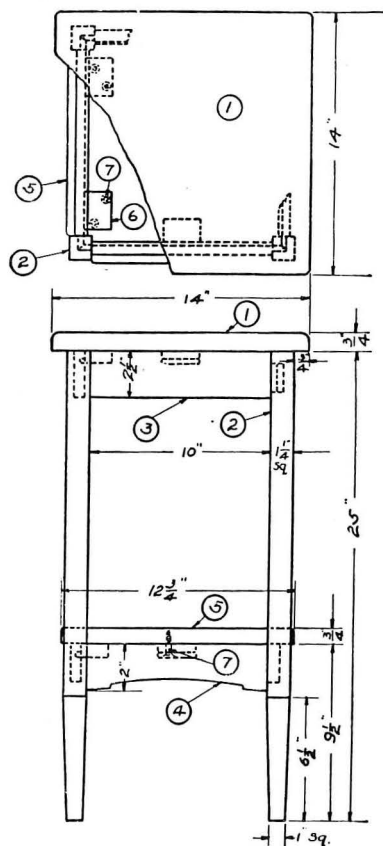
DIVISION ALLOTMENTS, AUGUST 21, 1918, FOR PRODUCTION BY DECEMBER 1, 1918.
BOYS' WORK-BUREAU OF JUNIOR MEMBERSHIP A. R. C.

Supplies for Field Medical Supply Depot

American Red Cross House Furniture

| | Code—Item—Name | 4700—Chests, Table Ware | 4701—Chests—Cooking Utens. | 4705—Chests, Laboratory | 4707—Boxes, Ambulance | 4702—Tables, Bedside | 4703—Bread Boards, Plain | 4704—Bread Boards, Folding | 4706—Splints, Wood Vencer | 4708—Splints, Coaptation | 4602—Drafting Boards for Reconstruction Hospitals | 4009—Inkwells—Nurses' Home | 4009—Inkwells—A.R.C. Houses | 4005—Wood Screens | 4011—Dressing Tables | 4003—Taborets | 4010—Rugs | 4013—Costumers |
|-----------------------|----------------|-------------------------|----------------------------|-------------------------|-----------------------|----------------------|--------------------------|----------------------------|---------------------------|--------------------------|---|----------------------------|-----------------------------|-------------------|---------------------------|---------------|----------------------|----------------|
| 1. Atlantic..... | | | | | 10 | 20 | | | 200 | 25 | 120 | 12 | 43 | 27 | 8-B 5-P | 54 | 24-B 17-G 10-P | 2 |
| 2. Central..... | | | 7 | | | 20 | 2 | 2 | | | 24 | 12 | | | 3-P | 38 | 38 | |
| 3. Gulf..... | | 2 | | | | 5 | | | 200 | | | 12 | 36 | 17 | 5-B 6-P 3-G | 50 | 18-B 18-P 18-G | 23 |
| 4. Lake..... | | 5 | | | | 20 | 5 | 5 | 300 | | | 24 | | 2 | 1-B 1-G | 25 | | |
| 5. Mountain..... | | | | | | 25 | | | | | | 12 | 12 | 5 | | 12 | 6-B 6-P 6-G | 3 |
| 6. Northern..... | | | 5 | | | 20 | | | 200 | | | | | | | | | |
| 7. Northwestern..... | | | | | | 25 | | | | | | | | | | | | |
| 8. New England..... | | 5 | | | | 20 | | | 300 | | | | | | | | | |
| 9. Pacific..... | | | | | | 50 | | | | | 24 | | | | | | 10-G 9-B 2-P | 20 |
| 10. Potomac..... | | 3 | | ½ | | 5 | | | 100 | | 48 | 36 | 48 | 36 | 3-B 9-P 5-G | 46 | 30-B 30-P 24-G | 16 |
| 11. Pennsylvania..... | | 5 | | | | 20 | 3 | 3 | 200 | 25 | 24 | | | | | | | |
| 12. Southern..... | | | 3 | | | 5 | | | 200 | | 48 | 120 | 48 | 39 | 18-B 18-P | 168 | 46-B 46-P 48-G | 30 |
| 13. Southwestern..... | | | 5 | | | 10 | | | 300 | | 24 | 48 | 42 | 40 | 2-St 8-G 7-P 6-B | 133 | 19-B 19-G 18-P | 51 |
| Total..... | | 20 | 20 | ½ | 10 | 245 | 10 | 10 | 2000 | 50 | 312 | 276 | 229 | 166 | 108 | 516 | 462 | 145 |

*Note: Numbers used in case of supplies for Field Medical Supply Depot indicate hundreds.



Details of Taboret.

houses in connection with all base and general hospitals in the country. The Juniors were asked to contribute about 200 pieces toward furnishing each house—tables, benches, lamps, rugs, tabourets, dressing tables, wood screens, ink wells, costumers, quilts. By September 1st, 1918, the schools had completed 4,018 pieces—their contribution to the first 26 houses.

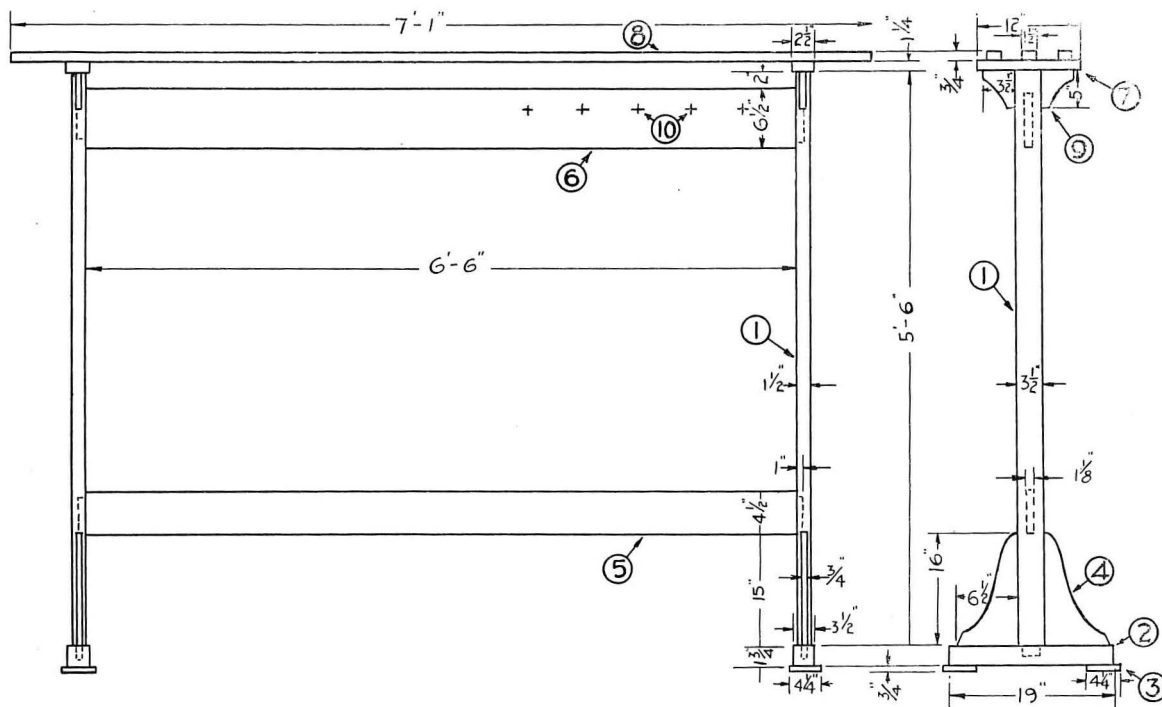


Making Red Cross Packing Cases in Austin.

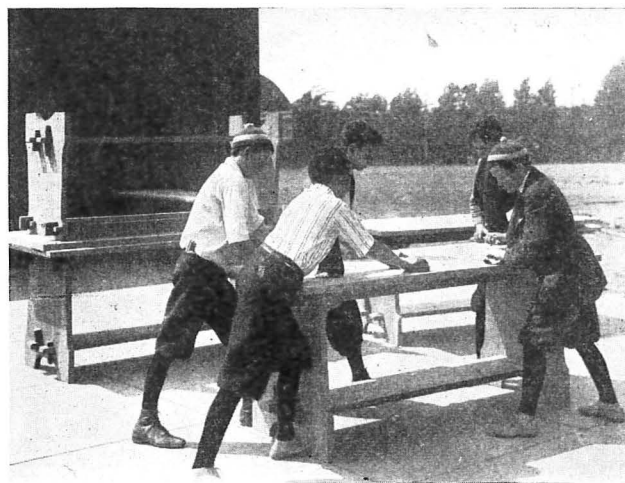
Eighty more of these buildings are now complete or under way, opening a wide field for Junior endeavor. Two thousand nine hundred pieces for the new houses will be ready for shipment December 1st.

(3) *Equipment for the Medical Corps of the U. S. Army.* This is the biggest order yet consigned to the schools. It includes chests for packing table ware, cooking utensils, and laboratory equipment, ambulance boxes, drafting boards, bread boards, bedside tables, and splints. The first quota ordered for December 1st reached 267,750.

Hammers strike harder, saws make a cleaner cut when the knowledge of a vital need nerves the mind and arm behind them. Only a remarkably pure passion for craftsmanship can find entire satisfaction in perfect performance for its own sake. But it is just plain human to do one's best to fill an immediate human need. The great gift of the Red Cross to the



Details of Costumer for the Red Cross.



Sanding Tables for the Red Cross. A Class of Boys in Buffalo.

American school is this linking up of the process of learning with immediate results of which the tangible value cannot be denied. It has put the American school on the war-map and made good craftsmanship the price of admission to the privilege of national service.

In the following paragraphs are typical directions and bills of material as issued by the Red Cross for the use of schools. Drawings of the taboret and costumer will be found on the preceding page.

COSTUMER.

This costumer may be made of yellow or white pine, or poplar. The frame is of solid construction; the joints are pinned, mortised and tenoned, and glued. The hooks—26 in all—are placed six inches apart on both sides of the upper rail. The stock is planed and sanded smooth, and given one coat of shellac and two coats of varnish.

| Bill of Materials | | | |
|-------------------|---------------|---------------|------|
| Item | Name | Size | Req. |
| 1 | Uprights | 1½"x3½"x5' 6" | 2 |
| 2 | Base | 1¾"x3½"x19" | 2 |
| 3 | Base Blocks | ¾"x4¼"x4¼" | 4 |
| 4 | Braces | ¾"x6½"x16" | 4 |
| 5 | Bottom Rail | 1½"x4½"x6' 8" | 1 |
| 6 | Upper Rail | 1½"x6½"x6' 8" | 1 |
| 7 | Upper Support | 1½"x2½"x12" | 2 |
| 8 | Top Strips | ¾"x1½"x7' 1" | 3 |
| 9 | Brackets | ¾"x3½"x5" | 4 |

SUPPLY CABINET.

This cabinet is made of yellow pine, white pine or poplar, free from knots or other injurious defects. It is necessary that the frame be of solid construction, either glued up stock or tongued and grooved, beaded stock. The door must be mortised and tenoned and glued; the panel sets in one-half inch. The doors must fit snugly and must be hung properly. The stock should be planed and sanded smooth, and given one coat of orange shellac and two coats of varnish.

The parts are to be fastened with necessary screws and nails. The doors are hung on three-inch loose-pin, butt hinges and are fitted with a lock the proper size, and a spring catch.

| Bill of Materials. | | | |
|--------------------|----------------------|-------------------|--------|
| Item | Name | Size | Req. |
| 1 | Top | 7"x25"x5' 2" | 1 |
| 2 | Side | 7"x23½"x5' 5½" | 2 |
| 3 | Front Trim Side | 7"x3½"x5' 5½" | 2 |
| 4 | Front Trim Top | 7"x3½"x4' 5" | 1 |
| 5 | Front Trim Bottom | 7"x6"x4' 5" | 1 |
| 6 | Shelf | 7"x23"x4' 10¼" | 4 |
| 7 | Back (Compo Board) | 4' 11"x5' 5½" | 1 |
| 8 | Door Stiles | 7"x3½"x4' 7½" | 4 |
| 9 | Door Top Rail | 7"x3½"x1' 10½" | 2 |
| 10 | Door Bottom Rail | 7"x5"x1' 10½" | 2 |
| 11 | Door Panel | ¾"x20½"x4' ½" | 2 |
| 12 | Hinge | 3" Loose Pin Butt | 2 pair |
| 13 | Corbin Cylinder Lock | | 1 |
| 14 | Block | ¾"x3½"x6½" | 2 |
| 15 | Block | ¾"x5"x6½" | 2 |
| 16 | Moulding | ¾"x1½"x9' 6" | |
| 17 | Battens | ¾"x3"x22½" | 8 |

HISTORICAL STYLE AND THE DESIGNER

Edward J. Lake, Professor of Art, University of Illinois
(Third Article)



THE Greeks present the best and first example, historically, of a nation devoted to the creation of beautiful forms. The Greeks were not inventive of constructive or decorative devices. The post and beam construction which they adhered to is the simplest of all construction, and they were little interested in mechanical achievement.

The decorative motives of Greek art are not numerous, but they are used in great variety of adjustment. Scarcely two examples of the same units or pattern can be found that are used in precisely the same manner and proportion. This was not the result of a desire for variety or unique result, but of a much finer incentive; the desire to get the best results possible out of few and simple motives.

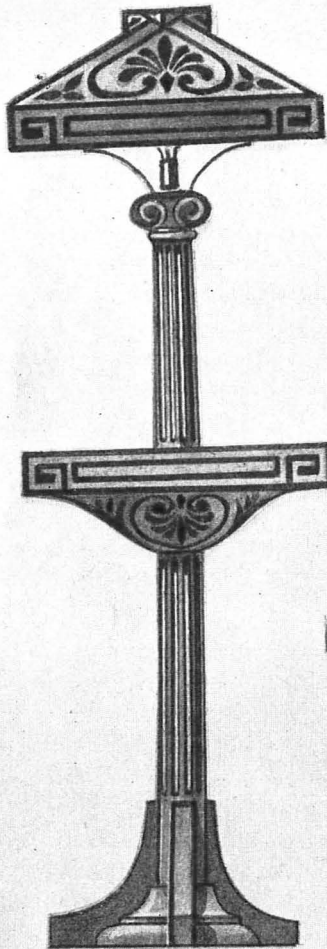
This refinement of form is at once the most needed and the most difficult to acquire of the lessons from historical art for the modern designer.

The most distinctively Greek units of decoration are the fret or meander; the wave or scroll, the spiral; the S curve or "line of beauty;" the rosette and the

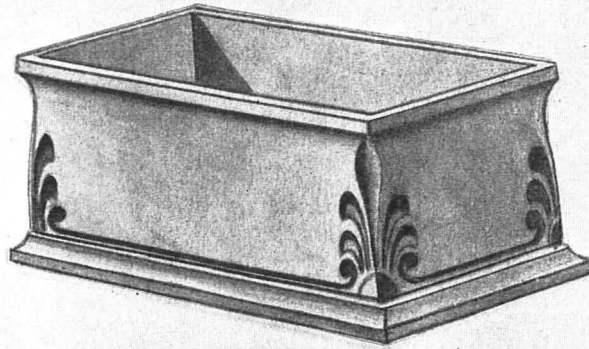
guilloche. The constructive forms or architectural elements that were most used by the Greeks are mouldings; flutings or channelings, dentils; egg and dart; bead and reel and scales or imbricated forms. All of these forms were used in proportion and place to give the finest effect of light and shade and contour. The sections of mouldings were probably drawn by hand for the profiles are not arcs of circles, but approach the conic sections such as parabolas, hyperbolas, and ellipses.

As a rule the enrichment, whether painted or carved, corresponds closely and therefore harmonizes with the contour of the form on which it is placed. This principle of Greek art is one which modern designers may well follow. It assures harmony.

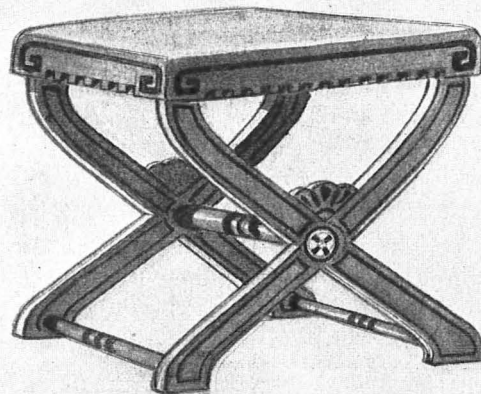
In the way of acquiring from Greek art a sense of refinement in form the modern designer should copy and recopy choice examples. By drawing and modeling Greek patterns, mouldings, vase forms and sculpture, the sense of their refinement will gradually become established in the mind and effect a standard from which delicate form may be appreciated and produced.



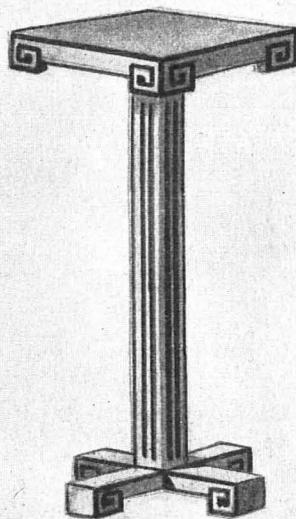
LAMP STAND



FERNERY



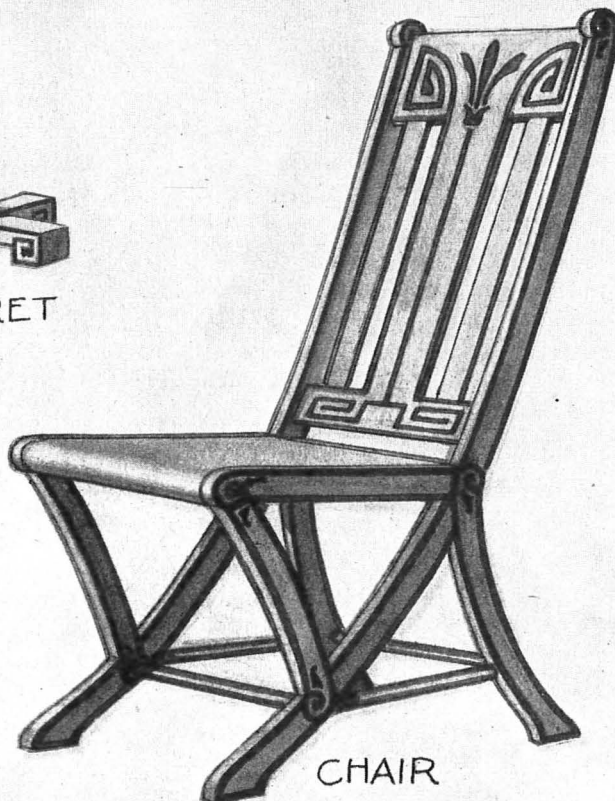
STOOL



TABOURET



BOOK END



CHAIR

APPLICATION OF GREEK LINE AND FORM TO MODERN
OBJECTS IN WOOD.

INDUSTRIAL-ARTS MAGAZINE

Board of Editors

E. J. LAKE

S. J. VAUGHN

W. H. HENDERSON

EDITORIAL

AN OPPORTUNITY.

THE action of the War Department in organizing the National Army Training Detachment and the Student Army Training Corps has brought into being the largest single plan of vocational education undertaken by any nation. For the present at least war will be the vocation of several millions of Americans and the two branches of the service referred to are offering training in numerous vocations of peace for a necessary war purpose. Only a rank pessimist will fail to find a permanent good in this training for the period of peace and reconstruction after the war. The industries and professions, included in the short courses as well as the longer courses, taught by government instructors, are basic and universal in their necessity and will be more important than ever after the war. The work will not be lost but should prove a strong economic asset to the nation.

The trade and high schools of the country can render a service in the direction of the activities of the Student Army Training Corps and the National Army Training Detachment by giving special attention to the boys between 15 and 17. Thousands of these are exhibiting a restlessness that springs from the desire to be of help and that anticipates the day of registration when they shall become 18 years of age. The possibility of entering the Students Army Training Corps or the National Army Training Detachment may be utilized as a strong motive for entering and sticking to types of educational work that these branches of the service are interested in and for which they are seeking recruits.

Drawing, woodworking, machine shop practice, and other vocational subjects can readily be adapted to the purpose without destroying in any respect their true vocational value.

THE ACTUAL WORK OF RE-EDUCATION.

AS the work of re-education of disabled soldiers and sailors progresses in the military hospitals, certain radical misconceptions begin to appear. Judging from the abundant literature on this subject, one might reasonably conclude that practically all of the returned soldiers and sailors were crippled and maimed for life. Sad to say, some of them are. But the total number of permanently crippled men is comparatively very small. And the number of crippled men who are incapacitated for their pre-war work is still

very much smaller. The majority of even the badly crippled men will be able to return to their former occupations.

There seems, also, to be a widespread belief that the purpose of re-education is to teach armless and legless men to do marvelous stunts with artificial limbs; or one-armed men to compete by the use of artificial appliances, in mechanical pursuits requiring two good hands; or sightless men to do the work of men with perfect vision. It is a very dramatic thing to exhibit hopelessly maimed men who have developed great facility in the use of artificial appliances. But practicable re-education in most cases is based upon the frank admission of the fact that, other conditions being equal, the one-armed man cannot compete in a line requiring two good arms, without long, laborious, and discouraging training, if at all. Instead of denying a man's inability to continue his pre-war work and trying to train him all over again for the same task with his insurmountable handicaps, sane re-education accepts the fact that the man is hopelessly handicapped for certain lines of work and proceeds to select another type of work with which his disability does not interfere and for which he may be readily trained.

The dramatic and picturesque accounts of crippled men doing all but impossible tasks, generalizing that a man can get along as well with one arm and one leg as with a pair of each, performed the very important function of attracting the attention of the public to the prime importance of the question of re-education. But the policy having once been established of refitting for remunerative employment every man who comes back disabled from the battlefields, the real problem becomes very different from the dramatic and picturesque representations of the daily press. Every possible effort should be and is being made to minimize the loss of limbs by the use of artificial appliances, but the problem of training for livelihood is very largely a matter of substitution. A machinist, having lost an arm, becomes a book-keeper, for instance. An electrician, having lost a leg, becomes a Linotype operator or a telegrapher. A plumber, having a permanently injured spine, becomes a jewelry and watch repairer.

Thus it will be seen that the re-education for crippled soldiers is essentially selecting a new task to suit the man and training him for it, rather than laboriously remodeling the handicapped man to fit the old job.

WORKING FOR SANTA CLAUS.

AGAIN the Christmas shopping season is upon us, again the importunity comes "to do your shopping early," and again the editors of this Magazine raise a protest against the indiscriminate and unfrugal distribution of "good will" at so much a head. In the past, Christmas buying and Christmas giving degenerated into empty form. "Christmas Junk"

became an accurate, even if undignified, description of the bewilderment of useless and atrocious objects which merchants crowded into their show windows and which people bestowed with more or less "loving affection" upon their friends. The custom of gifts is as fine as it is old. Our protest is against the perversion and the cheapening of the real spirit of it.

Last year, a great advance was made in the matter of eliminating the wasteful and vulgar custom of "appreciation according to cost," and of thinking of gifts in terms of monetary values. Not only was an advancement made along this line, but there was carried out in the schools more extensively than ever before the plan of having the Christmas token express simply and inexpensively the personal remembrance and regard of the giver thru his own effort and ingenuity.

This year, the tragic yet hopeful year of all the years since time began, when malice, desolation, suffering, and death are rampant in the world—this year is the time when traditions should spring into new significance, when expressions of friendship and good will should be sincere and full of meaning, and when there should be no "gifts without the giver."

Let the schools emphasize the need for conservation and common sense giving. Let them encourage the art, the household arts, manual training, and vocational classes to produce tasteful, refined, and inexpensive articles designed and made for the definite personal expression of respect, gratitude, or affection. Such an undertaking on the part of the schools would not only eliminate a foolish and wasteful habit unworthy of a sacred tradition, but would at the same time vitalize and enrich the work of the industrial arts.

OPEN LETTERS.

WE have read with much interest "An Open Letter to the Art Teachers of America" by Joseph Pennell in the August issue of the American Magazine of Art. We have read with added interest "An Open Letter to the Manufacturers of America" by James Parton Haney in the October issue of the same publication. Mr. Pennell's concern is for the practical and technical instruction of the illustrative arts in America. He asserts that "American illustration never as a whole was so commonplace, American engraving so artless, American posters so pitiful." We have noticed commonplace, artless and even pitiful examples of these arts but not "as a whole." Indeed as a whole we have thought and believed that American illustrative arts are effective and unique. No country uses such abundance and variety of printed illustrations as America. American publications excel in the intimate and telling support of sentiment given to the text by illustration. In our analysis of the needs of instruction in the industrial arts great care must be taken to direct instruction toward a specific result. The American art student has not been adequately trained in the use of his tools and medium to a specific purpose and should

know the limitations put upon his art by the processes of reproduction but it is not possible or necessary that the illustrator or the commercial designer should be trained to the art of engraving.

Mr. Pennell's example of the training of the architect is an excellent illustration of the futility of his demand. The architectural teachers of Europe and America have long since recognized the impossibility of teaching the architect all of the trades relative to building. The burden of instruction in the leading architectural schools is on design as the distinctive characteristic of good architecture. We believe that the burden of instruction in the illustrative arts should be on illustration and design and if schools of engraving are needed the instruction should be directed to produce skilful engravers.

Dr. Haney's "Open Letter" is a protest against the implication in Mr. Pennell's letter that the art teachers are responsible for the lack of adequate industrial art schools in America. It is addressed to the manufacturers as most concerned and best able to promote such schools by assuring employment to graduates; by "advocating, instituting and backing these schools."

There is undoubtedly a necessary and desirable support the manufacturers can give, yet schools supported by a class who make exclusive use of the product of the school for their own advantage is not liable to be the kind of industrial school that will flourish and develop in a Democracy. Industrial and vocational training need, above all, government and state support. Mr. Pennell says "The government must be induced to establish a training school for craftsmen." This is easily said and seems to be worth saying until one considers that the great variety of industrial workers situated in various parts of a great cosmopolitan nation must be trained to their work in intimate contact with the particular industry they expect to follow. One isolated government craft school might do much in the way of developing research and highly skilful execution in industrial art, but could hardly satisfy the great need of training expert workmen for special industries located in various parts of the country. We are glad to quote from a third letter from Dr. C. A. Prosser, published in the November *Industrial-Arts Magazine*: This letter holds rich promise of progress in the direction we consider most feasible and desirable.

"The Federal Board is so deeply interested in the question of the use of art in industry that the office has already started a study of the whole question which is to be carried on by one of the most prominent, able, and experienced champions of industrial art in the country. With the results of this study as a start, the Board in possession of the facts will be in a position to encourage the use of federal moneys for training in applied art which will bring results in better goods and more prosperous producers."

A Program for Vocational Guidance in the High Schools

Part II—Practical Suggestions for Applying the Program

In the November issue of the *Industrial-Arts Magazine* appeared a discussion of the principles underlying a workable program for the introduction of vocational guidance in high schools, etc. The statement of these principles was formulated by a committee of educators, headed by Mr. Frank Leavitt, of Pittsburgh, for the N. E. A. Commission on the Reorganization of Secondary Education. Following is the program recommended by the committee:

The Program Recommended.

No system of vocational guidance now employed is complete and adequate, but the committee recommends the following as a reasonable and comprehensive vocational guidance program. The eight steps in this program are evolved from a careful study of the philosophy underlying the vocational education movement:

1. Survey of the world's work.
2. Studying and testing pupils' possibilities.
3. Guidance in choice and rechoice of vocation.
4. Guidance with reference to preparation for vocation.
5. Guidance in entering upon work; that is, "placement."
6. Guidance in employment; that is, "employment supervision."
7. Progressive modification of school practices.
8. Progressive modification of economic conditions.

1. Survey of the World's Work.

In an adequate program the spirit of vocational guidance will be manifested in the whole system of administration. Such a spirit will call for a broad program of studies, especially in the years of the junior high school, and will protest against too narrowly restricted or too highly specialized curriculums in the senior high school. Every curriculum should provide sufficient diversity to give pupils as wide experience as the limitations of time and school conditions will permit. The school should also give a vocational interpretation to these experiences.

The committee recommends the Grand Rapids plan for the intelligent use of a part of the work in English composition to develop a thoughtful attitude on the part of the pupil toward the problems of wise choice of and adequate preparation for vocation. The reader is referred to the report of the Committee on English* and to the chapter on "Educational Guidance" in the forthcoming report of the Committee on Organization and Administration of Secondary Education. Other reports also will show how the several secondary school subjects may be so broadened as to give vocational outlook.

The committee also recommends specific courses, appropriate for the age, grade, and conditions of the pupils, designed to give systematic instruction regarding such phases of the world's work as can be brought within the comprehension of the class. Emphasis should be given to aspects likely to influence in any important way the later choice of occupation. Such courses obviously should describe the conditions of work, the relation to the health of the worker, the financial returns, and the opportunities for advancement. They should emphasize particularly the value of the service to society and the effect of the occupation upon the growth and development of the worker.

The study of occupations should assist individual pupils to discover and develop special interests. While this purpose can be realized most effectively where the program offers opportunity for wide experimentation or "sampling," yet much can be accomplished by the course itself, especially if effective illustrative material is provided. An important phase of this course is the first-hand study of occupations by the pupils themselves. Local occupations are the ones most advantageously studied by this method, but not all such occupations can be studied in the same detail. The following outline, based upon successful experience, could with slight modification be used effectively in almost any school:

Outline for the Study of a Vocation.

- I. General statement concerning the vocation:
 1. Value of the vocation as a social service.
 2. Duties of one engaged in it.
 3. Number engaged in it in local community.
 4. Relative number engaged in it in general, with its probable future development.
 5. Relative capital invested in it.
- II. Personal qualities demanded:
 1. Qualities of manner, temperament, character.
 2. Mental ability.
 3. Physical demands.
- III. Preparation required:
 1. General education.
 2. Special or vocational education.
 3. Apprenticeship conditions.
 4. Experience required.
- IV. Wages earned by workers:
 1. Range of wages made (table showing distribution of all cases).
 2. Average wage per week.
 3. Relation of wage to length of experience and preparation.
- V. Length of working season, working week, working day, etc.
- VI. Health of workers:
 1. Healthful or unhealthful conditions.
 2. Dangers, accidents, or risks.
- VII. Opportunities for employment:
 1. In local community.
 2. In general.
- VIII. Organization of the industry, including the relations of the worker to his fellow workers, his employers, and the community.
- IX. Status of the workers:
 1. Opportunities for advancement.
 2. Time for recreation and enjoyment.
 3. Adequate income for recreation and the comforts of life.
 4. Any other items of peculiar interest in this connection.
- X. Biographies of leaders in the vocation.

2. Studying and Testing Pupils' Possibilities.

Obviously individuals differ widely in their aptitudes, capacities for work, and other characteristics. An adequate vocational guidance program should develop the pupil to the point where he will appreciate this fact and will be able to evaluate, to some extent, at least, his own capabilities. While some people overcome by training what appear to be temperamental and physical obstacles, it is best, other things being equal, for each individual to engage in that work for which he is best adapted. It is a simple matter to state the principle, but actual accomplishment in this field is meager. The technique of studying the problems involved has not been developed, and, in fact, has hardly been discussed. Should the individual himself bear the entire responsibility of discovering his aptitudes, presumably in later life and after experience with the trial and error method, or should responsibility be shared by the school, at present almost equally unprepared, but with great opportunities for developing a technique if it will only address itself intelligently to the task?

One of the most effective and available means of studying and testing pupils' possibilities is thru "sampling" and "try-out" courses. These are especially appropriate in the junior high school period. They should not be confined to the industrial courses, but every pupil should have some experience in a wide variety of activities. Home gardens may give some taste of agriculture; typewriting, business projects, and the keeping of accounts may give an insight into clerical and business pursuits; while handwork and industrial arts may reveal aptitudes in artisanship and mechanics. Surely the capacity to write and speak and interest in history,

* Bulletin, 1917, No. 2, U. S. Bureau of Education, pp. 143-147.

science, mathematics, and languages should be looked for and, when found, regarded as significant.

Extra classroom activities should be utilized as a means of discovering aptitudes. For instance, debating societies, especially when organized as city council, state legislature, or Congress, test powers of leadership; the school paper tests ability for journalism; the dramatic society may reveal qualities useful on platform or stage; and the management of an athletic team or school paper may disclose business ability. Moreover, these and other extra classroom activities have almost unlimited possibilities for giving contacts with different phases of adult activities.

Until social and economic conditions are immensely improved many children will leave school prematurely. The relation of mentality to early leaving has been studied for many years in the school system in Cincinnati. The school authorities of that city have been convinced that the schools should study the pupils for the purpose of discovering and recognizing the cases of low mentality two or three years prior to the time when the children are likely to leave school. In support of this policy the following considerations, among others, are given:

First, a very large proportion of the group that drops out early are badly retarded in school. With a 14 age limit, 66 per cent of those leaving school in Cincinnati between 14 and 16 were more than a year retarded. When the age limit was raised to 15 for boys and to 16 for girls, the retardation, figured on the same basis, rose to 80 per cent.

Second, a comparison of the children who left school in Cincinnati at 14 years with a corresponding group who were intending to remain in school showed that the children intending to remain were superior in every mental and physical measurement made. The difference was large at 14 years, and still larger at 15. The results were not yet summed up beyond 15 years, but it is believed that in general the difference is a progressive one.

Third, this same group of industrial workers in Cincinnati, when subjected to psychological tests at 18 years, contained 42 per cent who were materially below the norms for their age. The results seemed to indicate the mental inferiority of the majority of the children who left school as early as they were allowed.

Fourth, the studies so far made of the relative ranks of school children at various ages tend to establish the theory that wide differences in mental ability display themselves early in a school career; that the children at the foot of the class in early grades are, on the whole, those who become retarded and leave school early; and that those in the upper portion of the class in the early grades generally continue to lead the class and to go on in school after the compulsory school age. When the judgment of the school is supplemented and corrected by careful experimental measurements, it becomes safer to form a judgment about the probable length of a school career.

In view of these facts it seems to many persons that the school should, a few years before the end of the compulsory school age, select, or rather recognize, those children whose inferior mental ability is likely to be a factor in sending them into industry at the earliest possible moment. Is it not, therefore, desirable to modify the course of instruction for this group of children, provided they can be recognized early enough?

3. Guidance in Choice and Rechoice of a Vocation.

The choice of a vocation by the pupil should follow some study of the world's work and some attempt on his part to ascertain his own aptitudes. He should make such a choice early enough to enable him to make some preparation for that vocation before leaving school. One of the main advantages of an early choice is that it gives definite purpose to much school work and gives the pupil vital interests around which he will organize many ideas which otherwise would make but passing impressions upon him.

It is of the greatest importance that these early choices should be regarded by both pupil and school as provisional. There should be every encouragement for the pupil to revise his choice whenever increased insight into either the world's work or his own aptitudes or a new conception of service to be rendered indicates that some other vocation would be preferable. For this reason, among others, curriculums



JOHN C. BRODHEAD,

Assistant Superintendent of Schools, Boston, Mass.

Mr. Brodhead, who was formerly Director of Manual Training in the Boston Schools, has been elected assistant superintendent to fill the place made vacant by the election of Mr. Frank V. Thompson as superintendent.

Mr. Brodhead is a graduate of the Chicago Manual Training High School and has served in a number of schools as assistant instructor, teacher and assistant director of manual training in public elementary schools, private and vocational schools. He has made three trips to Europe to study the industrial schools and has prepared articles for the magazines.

Mr. Brodhead has been in the military service at Camp Meade since the outbreak of the war, having under his charge the work in vocational education. His services to the profession have been recognized by the Boston Manual Training Club and the Eastern Arts Association, both of which have elected him to the presidency.

should be so organized as to permit change from one to another with the minimum of loss, and all curriculums should be conducted in the same high school, so that pupils may be encouraged and not hindered in making desirable readjustments.

Early choices may well be between wide fields of activity rather than between specific vocations, or the pupil may fix his attention upon four or five vocations which appeal to him. As he progresses his choice may be narrowed to a specific vocation.

While these choices should be made by the pupil himself, nevertheless the school should exercise guidance to the extent of urging a thoughtful attitude, of helping the pupil to correct and verify his impressions, and of giving him the principles underlying wise choice.

4. Guidance with Reference to Preparation for a Vocation.

For the pupil who has made even a preliminary choice of a vocation the school should give careful advice regarding the subjects of study to be taken. This educational guidance, however, should not be administered in a narrow or short-sighted manner. Vocational preparation is only one of the valid objectives of education and too exclusive attention to this objective is not only socially disastrous, but also defeats even vocational efficiency. For a discussion of the valid objectives of education the reader is referred to the forthcoming report of the reviewing committee of this commission. Vocational education should take into consideration also the need for adaptability to changing economic conditions.

For the pupil who intends to enter a higher institution, the school should seek to give the broadest education consistent with the valid demands of the type of higher education which the pupil desires to pursue. The education of high school pupils should not be narrowed because some particular higher institution which the pupil may possibly enter sets up arbitrary and narrow standards. The responsibility for such standards must be borne by the higher institution itself and not be allowed to distort secondary education.

For the pupil who has neither chosen a vocation nor decided to enter a higher institution, the school should offer a variety of work intended to help him form an intelligent purpose.

All pupils should, thru the courses in civics, become acquainted with the opportunities for continued education, such as libraries, public lectures, and forums. Those who leave school during the high school period should have their attention called specifically to opportunities for continuation education in both public and private day and evening schools.

5. Guidance in Entering Work—that is, "Placement."

Briefly stated, the purpose of placement is to bring a youth desiring work into contact with the employer seeking some one to fill a position and to see that the characteristics of the young person and the requirements of the position promise success for the youth and satisfaction for all concerned.

Much that has been said in Section IV regarding placement is pertinent here. Each school system should develop its own type of placement.

The highly organized placement bureau is not appropriate for a village school, nor is it necessary. Here the placement may be secured thru the personal interest of the teachers and their acquaintance with employers in the community. In order, however, to develop placement to the highest efficiency in such communities, some systematic plan must be made for interesting the employers in the school product. The detail of such a plan would vary with the local conditions.

6. Guidance in Employment—that is, "Employment Supervision."

An adequate vocational guidance program will require that all children under 18 years of age shall be under the supervision of the educational authorities, whether the children are in school or have gone to work. The registration of all working children under that age with the school authorities should be compulsory. Reports by the employers and visits of inspection by school officers at frequent intervals should also be required.

These children who have gone to work are sorely in need of continued education adapted to their special needs. The establishment of such continuation classes and the attendance of all employed children under 18 should be made compulsory by law.

All that is presented in Section IV under the head of "Employment Supervision" and the reference in this section to information regarding opportunities for education in evening schools are pertinent to "guidance in employment."

Under present conditions the first occupation chosen by a young person is not likely to be the one which finally becomes his life work. This is true particularly of those who choose earliest and with the least preparation for vocational life. When a youth stays in school until he is 18 or 19 years of age, the opportunities for a wise and deliberate choice are greatly improved. Even in such cases, however, unfitness or unsuitability of the worker for the position is often discovered later and the desirability of a readjustment is demonstrated.

Early changes by the younger and untrained workers are not necessarily bad. While grave dangers attend "job hoboism," early changes, if properly supervised, may give a kind of vocational training thru a "wandering apprenticeship." Mrs. Woolley has pointed out that those who make several changes in the early and relatively uneducative positions secure, as a group, higher wages than those who stay too long in their first place. She says, "Children who display an excessive amount of shifting in industry—as much as seven or eight times during the first two years—are inferior. They belong to the worst retarded group, and these numerous changes do not tend to result in higher earning capacity. The group of children who change positions three or four times during the first two years increase their earning capacity as compared with the corresponding group who remain in the same position."

The school should assume its full share of responsibility in helping young people to choose their positions, where necessary, in helping them in their early readjustments. This responsibility will be met in part by giving information, by providing training, by placement, or by employment supervision; but it will not be met adequately until the school induces the pupil and parents to consider for themselves the problems of vocational selection.

7. Progressive Modification of School Practices.

As indicated in other parts of the report, the inaugura-

tion of an effective vocational guidance plan should be of great value to the school system. It should lead the school to modify its practices from time to time without waiting for an educational revolution. It should prevent the schools from making the mistakes incident to the enthusiastic development of special courses or curriculums in the hands of specialists without due regard to the real demands of the industrial and economic situation generally. Such mistakes have resulted at times in overcrowding certain vocations and absolutely neglecting others, to the great disadvantage of young workers. The vocational guidance department is in a position to criticize effectively the training offered in the school thru its study of the way in which the school product succeeds or fails when subjected to the test of actual service. Another result of this check system should be the modification of high school work on the basis of the power evidenced by high school graduates in their college work.

8. Progressive Modifications of Economic Conditions.

Vocational guidance must not only teach the child to adjust himself to his environment, but must also equip him to change that environment. The kind of guidance that merely helps individuals to meet successfully the requirements imposed by employers might make for a more heartless competitive system than exists at the present time. Vocational guidance should lead to the co-operative solution of community problems of economic and social life on the basis of mutual welfare.

Employers are finding that recognition of social welfare in the conduct of their enterprises is not only good citizenship but is good business. Faith in the effectiveness of plans that promote community helpfulness must be instilled into the pupils, who will be the adult citizens of the next generation. Twenty years from now, undoubtedly, the spirit of co-operation will permeate vocational life more than it does today, and because of that fact school children must acquire the spirit of co-operation and be trained in co-operation thru the social organizations of classroom and school community. The significance of co-operation should be taught in all the social studies and in the course in occupations.

SECTION VI.—SOME IMPORTANT RELATED TOPICS.

1. Psychological Tests and Vocational Guidance.

Recently much has been said and written regarding the value of psychological tests for the discovery of vocational aptitudes and vocational disabilities. Considerable experimental work has been done in this field in the past six or seven years, and there are several types of occupations for which tests have been developed. Wide differences of opinion exist, however, as to the value of these tests for purposes of vocational guidance. Their value as contributions in the field of experimental psychology should not be confused with their value as effective means of selecting an occupation for an individual, or an individual for an occupation. As the work is in the early stage of experimentation, judgment on this point must be suspended until results are more conclusive. It is important, nevertheless, to set forth the prominent facts regarding these tests for the readers of this report.

The layman should be guided in his attempt to evaluate the results of vocational psychology by the writings of recognized psychologists rather than by popular writers or by those who advertise perfected systems of vocational analysis. Frequently the layman is sanguine of early results in the field of vocational selection, while the psychologist is frankly critical of the assumption often made that people can be selected for specific positions or positions selected for individuals with anything like scientific accuracy.

The psychologists, however, are quite clear regarding their aims, methods, and partial accomplishments. They are confident that progress is being made, tho they do not predict certainty in results for the immediate future. They are seeking for correlations between the results of these tests and the actual performance of the tested individuals later on in some particular line of work. They believe that where there is a high co-efficient of correlation in a large number of trial cases, it will be reasonably safe to accept the results of the same tests when given to untried applicants, and to expect that those succeeding in the tests will succeed also in the positions in question. The most helpful type of work in the

field of mental testing for vocational guidance is the administering of miscellaneous tests of a sort that promise well and the subsequent selection of the best of these tests as measured by actual results. Work of this kind requires time, but promises well for the future.

Experimental work in the field of vocational psychology falls into three rather distinct classifications, as follows:

First, there is the attempt to supply the employer with tests that will enable him to select from a large number of applicants those most likely to succeed in a given position. This procedure is coming to be known as "vocational selection." It promotes efficiency in the organization and thus benefits the employer. One group of employers is so fully convinced of the ultimate efficiency of this method of selecting employees that they have given the necessary financial support to enable one of the universities to experiment extensively in this field for a term of five years.

Less extensive experimentation has been carried on by individuals to devise tests for the selection of workers for special occupations. Tests for determining ability to profit by musical training, and tests devised for the selection of salesmen, are illustrative of this kind of investigation. In some instances such tests aim to discover special vocational aptitudes while in others they merely designate degrees of general intelligence. To some extent, therefore, these tests may coincide with the general intelligence tests mentioned below.

Second, there is the attempt to determine which of several occupations would be the best one for a given individual to follow, at least so far as his mental characteristics may serve as an indication. This involves not only an analysis of the individual's mental equipment but also an extensive study of the characteristics of successful workers in each of the important occupations, in order that the demands of the positions may be ascertained. Naturally, much less has been done in this field than in the one just examined. Theoretically it would be necessary to canvass the whole range of occupational life before the investigator would be able to say that a given individual would reach his highest degree of self realization in a particular position. The principle seems relatively simple, but its extension in practice presents many difficulties. So far as the committee is aware, no psychologist has yet presented a complete and comprehensive analysis of the mental aptitudes essential for success in any single occupation.

Third, there is the attempt to develop tests for the measurement of general intelligence. The significance of these tests for purposes of vocational guidance, rests on the assumption that an occupation can be classified with reference to the kind or amount of intelligence demanded of those who are engaged in it. It is assumed, further, that young people can be classified as to their general intelligence according as they grade high or low with reference to established mental standards or levels. Obviously if such standards can be fixed and if tests can determine the level of intelligence at which a given individual stands, this phase of psychology will have an important bearing on vocational guidance.

It is not within the province of this report to discuss the relative merits of different systems of intelligence scales, or the limits within which their results have been shown to be effective, but it may be noted that results are found to be more reliable with younger than with older children. What appears to be a proved value of general intelligence tests is the assistance that they may give in determining which children will probably leave school prematurely. Experiments in this field have been carried on in the public schools of Cincinnati for several years. As a result the school authorities are convinced that there is an important relation between retardation, elimination, and low mentality. In this connection Supt. Condon says: "Measuring scales of intelligence have already reached the point where they can be of assistance to the schools in selecting children for certain kinds of vocational training. Such a selection is the most fundamental phase of vocational guidance, since the advice is given while there is still time for special training." Reference to this method of selection is given in greater detail under the heading "Studying and Testing Pupils' Possibilities," Section V of this report.

In most cases interest in the development of general in-

telligence scales has centered in the "scales" rather than in the young people immediately in need of guidance, for it is realized that many years of experimentation and scientific study will be necessary for its completion. In this field the psychologists themselves attach more importance to the testing of the tests than to the testing of people.

It will be some time before actual proofs of the validity of psychological tests for vocational guidance can be established, meanwhile, young people must be guided. It is also to be noted that the psychological test "tests only what it tests" and that there are many other factors in the problem of vocational guidance all of which the counselor must consider, for his problem is one demanding immediate solution.

Furthermore psychological tests themselves reveal the fact that a fundamental characteristic of the human being is adaptability—the ability to improve with practice. It is probable, therefore that other considerations, geographic, social, and economic, will frequently have greater weight in determining a youth's occupation, than his peculiar mental equipment, important as that factor may be. In other words, vocational guidance may well become a special study for the sociologists, or the economists, as well as the psychologists. It is precisely for this reason that the vocational counselor must not rely with too much confidence on unverified and possibly unimportant results of psychological tests.

As intimated, few tests have been given in such a way as to determine the ability of the youth to improve with instruction and training. The province of the vocational counselor, however, is to see that education and training become prominent elements in guidance. Therefore the ideal vocational counselor will be something of a psychologist, but he will also be a sociologist, an economist, and, most of all, an educator in the best modern sense of the word.

The committee believes that we should welcome continued experimentation in the field of vocational psychology, but that we should put the present emphasis upon education, training, and supervision. We are of the opinion that when false expectations are abandoned and unreasonable demands are withdrawn, psychology will be able to render worthy service in vocational guidance, and the psychologist may have a large share in making adjustments between individuals and society.

2. The Home and Vocational Guidance.

In the past twenty years the responsibility for advising with pupils and for starting them in their work has been shifted in large measure from the home to the school. In the future the school should do no less, but the home should do more than at present.

There is no activity of the school system that should be more closely in touch with the home nor one that should find a more cordial welcome on the part of parents than the work of the vocational guidance department. It is impossible to form an accurate judgment of a child's capacities, tendencies, and ambitions, without a knowledge of his home environment. Such an understanding can be gained only thru visits which, whenever possible, should be made by some one directly connected with the school as teacher or officer. Where this is not feasible, the assistance of social workers may be utilized. In Boston, for example, it has been found effective to have social workers make visits and report in detail directly to the schools.

Furthermore the parents should be conversant with and interested in the purposes of the various curriculums and courses offered by the school, the pupil's progress in his studies, and in his school work generally, and the fields of work open to him as a result of the preparation received. Such intelligent interest on the part of the parents may be aroused in various ways. The visits of teachers or social workers will help, but they should be supplemented by circular letters and pamphlets giving definite information about the curriculums and courses offered and the work toward which they lead. Personal conferences with individuals or with small groups of parents and more formal discussions in the meetings of parents' associations are also recommended.

3. The Training of Vocational Counselors.

Up to the present few persons have been trained specifically for counseling. This service is now rendered mainly by teachers who give extra time or have lighter schedules of teaching so that they may do this important work more

effectively. The classroom teacher, by reason of intimate contact with the pupil, will always be an important factor in any plan for conducting vocational guidance. For this reason teachers should be encouraged to study the principles and methods of vocational guidance.

The ideal plan, however, calls also for a vocational guidance director and such assistants as may be needed. Their training should include: Courses in educational theory and practice; courses in the theory and methods of voca-

tional guidance; psychology, sociology, and economics, including the social and economic aspects of labor problems; and a detailed study of many vocations. The basal requirements for vocational counselors include: Sympathy with youth, that they may invite their confidence and recognize their possibilities; occupational experiences, to know conditions at first hand; and social spirit and ethical soundness, to evaluate vocations in terms of personal development and service to society.

The United States School Garden Army in 1919

Lester S. Ivins, Regional Director for Central States

The formation of the United States School Garden Army, inspired by the United States Commissioner of Education, Hon. P. P. Claxton, and called into activity by the President, is an attempt to organize the boys and girls of this land as food producers. It is an attempt to mobilize the children to help meet a food emergency in order that the future may be safeguarded against want. Possibly growing food-stuffs for dollars-and-cents alone is commercialism, but growing food-stuffs to help feed those at home, and in order to release food for the soldier boys in France is patriotism.

The Department of the Interior, under the direction of President Wilson, has placed the Bureau of Education at Washington in charge of the movement, knowing that gardening has large educational possibilities, as well as an economic value. Production and real living instruction go hand in hand. There are great opportunities for food production in any army of five million children. There are hundreds of acres to be tilled—there are millions of children eager to work. In order that the immediate aim of food production and the ultimate aim of educational advancement, thru permanently employed garden teachers and supervisors may be assured, five specialists in gardening and agriculture, who have been given the title of Regional Directors; nineteen assistant regional directors; and one specialist in city school administration, have been called to Washington by the government to take charge of the work. The United States has been divided into five sections, namely, Northeastern States, Southern States, South Atlantic States, Western States, and Central States, under regional directors, C. M. Weed, F. A. Merrill, John S. Randall, C. S. Stebbins, and the author of this article, respectively. Supt. J. H. Francis, of Columbus, is acting as General Director of the office force and publicity manager for the movement.

As regional director of the Central States the author is very ably assisted by the following assistant regional directors:

Mr. Everett Murphy, Indiana and Illinois; Mr. N. M. Graham, Iowa and Nebraska; Mr. C. E. Cavette, North Dakota, South Dakota, and Minnesota; Mr. R. L. Nye, Michigan and Wisconsin.

A new army unit, numbering five million children, has therefore been called out, the ages ranging from 9 to 16. About two million responded last season and cared for their gardens under the direction of the U. S. S. G. A. officers. We feel hopeful that one million will answer the call during the next season in the Central States which include Ohio, Indiana, Illinois, North Dakota, South Dakota, Minnesota, Iowa, Nebraska, Michigan, and Wisconsin.

The working plan of the U. S. S. G. A. is as follows:

1. To get in touch with as many teachers as possible thru schoolmen, teachers' journals, newspapers, colleges, and normal schools.
2. To urge boards of education, school superintendents and clubs to secure teachers and supervisors of gardening.
3. To issue instructive, helpful leaflets covering all phases of gardening. All matter intended for instructional purposes is being prepared by the regional directors and will be distributed from Washington, D. C., direct to supervisors, garden teachers and garden superintendents.
4. Assistant regional directors visit city school superintendents and aid them in formulating and organizing for the coming school year.

Particular attention in this movement is being given to the boys and girls living in cities, towns and villages of more than 200 inhabitants.

Any group of young gardeners already organized in any institution may become a part of the U. S. S. G. A. This army movement is not intended to conflict with any organization already formed, but rather to stimulate and inspire all children to do better work, as well as to unify all garden work done thru the elementary schools in cities, towns, and villages.

All educational leaders in the countries represented by our allies have urged us to give more attention to gardening in our elementary schools both for the sake of food production and for educational purposes. The directors of the army, therefore, urge all teachers interested in gardening to apply for enlistment cards and report the number of children under their charge, whether the children are otherwise organized or not. Thus all the boys and girls will become a part of the U. S. S. G. A. and will receive its privileges. The unit of organization parallels the army. Teachers are urged to have the pupils, who are privates in the army, elect their captains, and first and second lieutenants. Each is to secure insignia designating his rank.

Enlistment sheets, posters, service flags, garden songs, pageants, courses of study in gardening, garden leaflets, as well as the insignia, will be furnished by the United States Bureau of Education, Washington, D. C. Further information may be had on application to the writer, addressed in care of the Bureau of Education, Washington, D. C.

The teacher will become the chosen leader in the Garden Army. Upon him, as in all other educational endeavors, rests the success of the movement. He must supervise the gardens, and impress the pupils that they are helping their soldier brothers in France when joining the United States School Garden Army.

We are expecting 30,000 teachers to be chosen to direct this garden work in the United States. A great many have already volunteered to serve their country in time of need. These teachers will also instruct and encourage the children, visit the home gardens and enlist the co-operation of the parents. We are very anxious that the boys and girls of America realize that they have enlisted in a great cause. We want them to sow seeds that will reap victory. There are vacant areas in back yards and adjoining lots to be redeemed from weeds by patriotic boys and girls.

We trust that the young folks, fathers and mothers and the teachers of our country will aid us in one of the greatest economical and educational endeavors ever undertaken in America. Reports from every state in the Union indicate that this new army will win a brilliant victory during the coming school year.

The schools of Altoona, Pa., in common with those of a number of communities in the country, have taken on new life and enthusiasm as a result of war activities in which the pupils and teachers have participated. Food conservation programs have engaged the attention of the teachers and pupils and remarkable work has been done in the Junior Red Cross. As an indication of the extent and value of the work accomplished, the following brief summary is given:

The grade school Red Cross Auxiliary collected a total of \$2,052.20 and the high school \$433.10. The grades contributed in finished articles 43 ambulance robes, 36 pillows, 39 sweaters, 127 pairs wristlets, eight helmets and 38 petticoats for Belgian Relief. The high school furnished 41 sweaters, 57 wristlets, fifteen pairs of socks, four scarfs, six afghans, and one helmet. Surgical dressings include 150 compresses, 525 wipes, 125 sponges, 71 oakum pads, fifteen 5-yard rolls, sixteen scultetus, 48 fracture straps, twelve slings, seven pneumonia jackets, and twelve many-tailed bandages. A total of 1,133 pieces were represented in the contribution of surgical dressings.

PROBLEMS AND PROJECTS

The Department of Problems and Projects, which is a regular feature of the INDUSTRIAL-ARTS MAGAZINE, aims to present each month a wide variety of class and shop projects in the Industrial Arts.

Readers are invited to submit successful problems and projects. A brief description of constructed problems, not exceeding 250 words in length, should be accompanied by a good working drawing and a good photograph. The originals of the problems in drawing, design, etc., should be sent.

Problems in benchwork, machine shop practice, turning, patternmaking, sewing, millinery, forging, cooking, jewelry, bookbinding, basketry, pottery, leather work, cement work, foundry work, and other lines of industrial-arts work are desired for consideration.

Drawings and manuscripts should be addressed: The Editors, INDUSTRIAL-ARTS MAGAZINE, Milwaukee, Wis.

ERECTING A SCHOOL FLAG POLE.

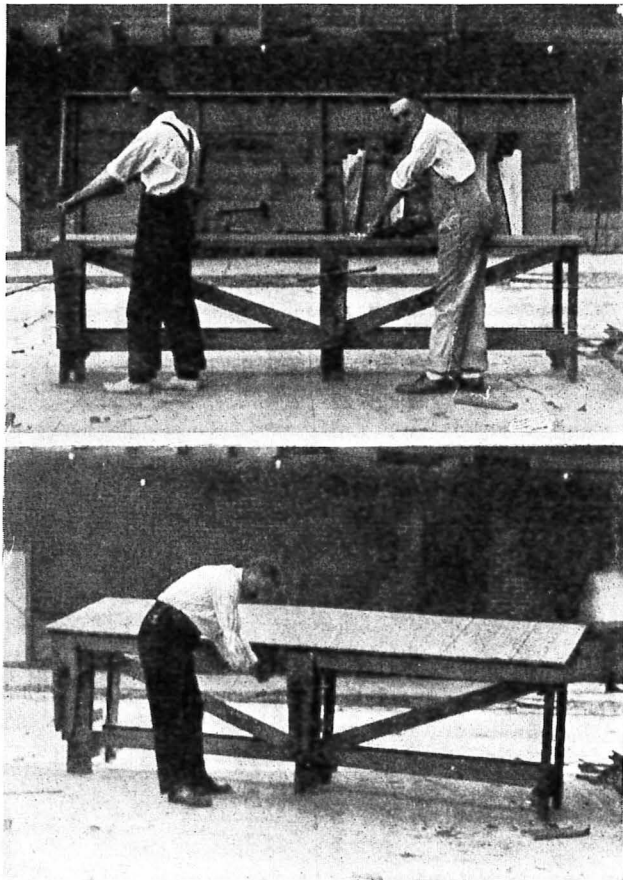
Clyde H. Oltman, Mechanic Arts Department,
Berlin (N. H.) High School.

One of the most interesting projects undertaken at the Colebrook, New Hampshire, Academy was the preparing and erecting of a school flag pole. The money was raised by the students of the academy and the work was done by the Mechanic Arts Class.

We were very fortunate in finding a sixty-foot spruce tree, straight as an arrow, measuring ten inches at the butt, and gradually tapering to four inches at the top. This was felled and a team dragged it to the school, where it was placed on trestles in such a manner as best to preserve its shape. The ends were squared and painted to prevent checking. The pole was then peeled and the knots smoothed down.

We procured two twelve-foot cedar posts. These were peeled and given several coats of creosote. The upper half of their lengths was fitted to the base of the pole and bolted in place. A piece of one and one-half inch strap iron was fitted around the top of the posts and drawn very taut with a one-half inch bolt. A bolt was put thru the base of the large pole to prevent the bottom end from splitting. The pulley and knob were fastened to the small end, and the whole was given two coats of white paint. The rope was run thru the pulley, and a snap fastened on to each end.

The class made a study of mechanical devices suitable for raising so heavy a piece, such as, the shears, derrick, a gin pole, a pulley, and various combinations of these. It



Rural School Work Bench made by manual arts students, Kansas State Normal School.



The Flag Pole, Berlin, N. H., High School.

was decided to fasten a pulley into the cornice of the school building where a very solid screw eye used by the painters still remained. As the pull still seemed to be somewhat horizontal, a shears was made of two by fours, by means of which the pole was lifted about one-third of the way. Three guide ropes were fastened on for balancing, and the pole was brought to a perpendicular position by the use of the pulleys, and plumbed from all sides.

A mixture of cement and rock was used to fill in the hole to the level of the ground. Forms were built for the part above the ground. It was necessary to stamp the cement well to fill the corners properly. After the cement had set about three days, the forms were removed and the portion above the ground was painted with a one-to-two mixture of cement.

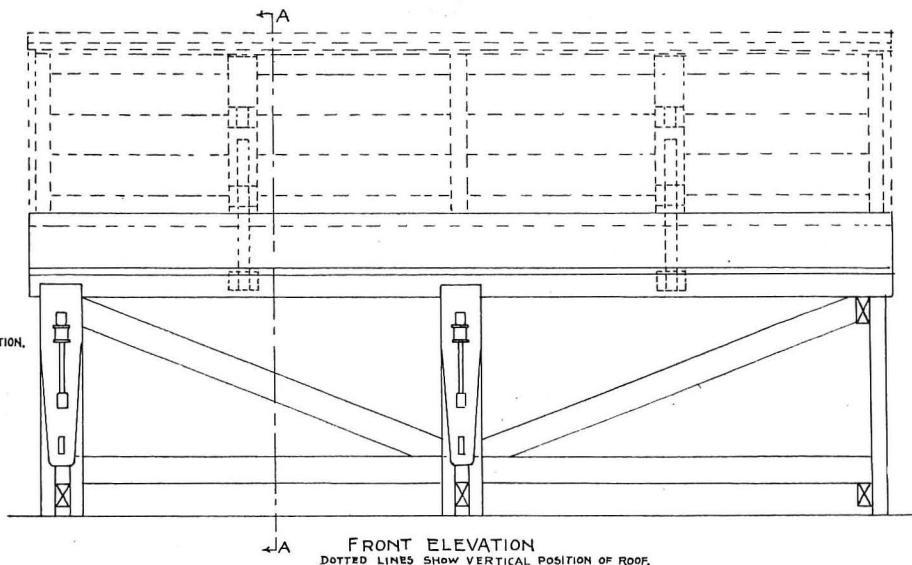
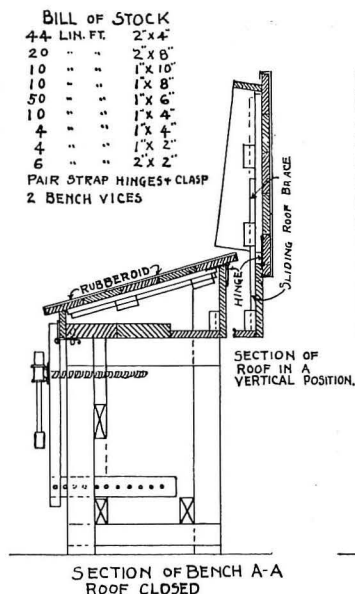
Besides raising the needed money and preparing and erecting the pole, the students made the national and service flags, and felt justly proud of their work on flag raising day.

RURAL SCHOOL WORK BENCH.

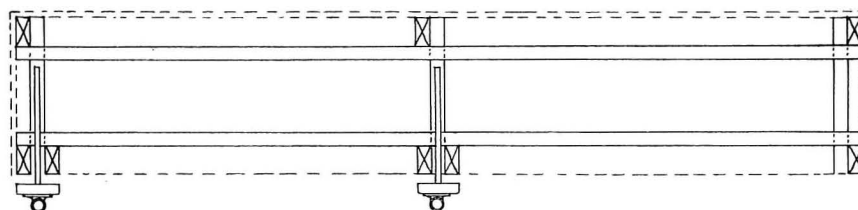
H. H. Braucher, Director Manual Arts, Kansas
State Normal School, Emporia, Kans.

The drawing illustrates the main features of a new work bench adapted to rural school conditions, where the building does not provide space for a workroom indoors.

It is a double bench of ordinary construction, fitted with two ordinary carpenters' vises and bench stop and built of



RURAL SCHOOL WORK BENCH
KANSAS STATE NORMAL SCHOOL
H. H. BRAUCHER,
DIRECTOR MANUAL ARTS.



DETAILS OF RURAL SCHOOL WORK BENCH.

2"x4" stock for frame braced with 1"x4" stock. The bench top is built up of two 2"x8" jointed to seven and one-half inches width in front of a 1"x7" piece forming the tool well at the back edge of bench. This is cut around the projecting

back posts which extend 10" above the top of the frame forming the support for the roof, which is hinged to them, acting as a cover for the entire bench and boxing in the space for a tool chest. The roof, or lid, is covered with rubberoid or other roofing material to withstand weather conditions and keep the tools dry. A safety hinge hasp, staple and padlock form the fastening and complete the requirements for a safe and convenient place for tools ready for work when the roof or lid is raised.

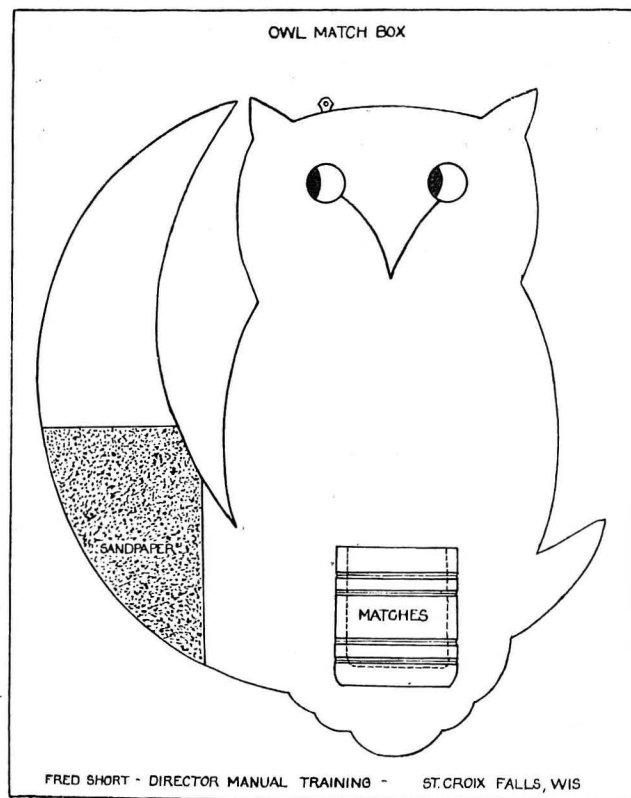
The roof is held upright for a tool rack by two sliding braces working freely in three or more notched blocks placed as shown to receive and hold them as the roof is raised into position. If the lower end of one of these is slightly notched and works loosely enough to catch on the middle block to hold it in position while the lid is being lowered it adds to the convenience of closing by having both braces up at the same time. A cord or chain safety stop is fastened to the front of roof and to the front of tool well and adjusted to prevent the roof from going clear over when being raised in a wind, or if it should get beyond control before the sliding braces are in place to hold the roof upright.

This bench should make it possible in many rural schools—even on the farms or at the homes—for considerable work to be done in mild weather and should be utilized especially in mild climates where the seasons are such that outdoor work can be done for some months during the school term. The idea originated at the University of Texas by Prof. O. E. Hanszen, whose suggestion has been carried out and extended by students of the Kansas State Normal School, at Emporia, Kansas, where the bench illustrated was designed and constructed. The idea may be useful to others interested in extending the field of woodworking more satisfactorily to the farm, the home and the country school where want of room now precludes this possibility.

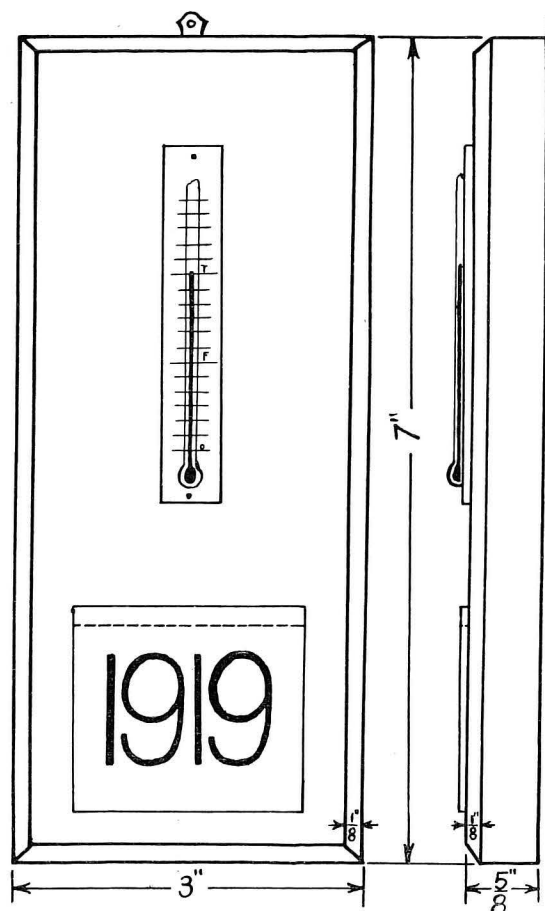
TWO CHRISTMAS PROJECTS.

Fred Short, Director of Industrial Arts,
St. Croix Falls, Wis.

The calendar mounting and match box described and illustrated herewith make very attractive projects, especially



Details of Owl Match Box.



Details of Calendar Mount.

for Christmas work. They are simple, inexpensive, easily made and are easily and cheaply shipped by parcel post. These projects may be worked up in quantities as "community work" and sold at Junior Red Cross sales or in other ways.

Calendar Mounting.

This project may be worked in very nicely in grade classes in bench woodwork and usually proves very popular with all grades. Small pieces of lumber that might otherwise be wasted can be utilized for this work. Any kind of wood which will take a good finish may be used, but oak or chestnut are best.

The stock is first squared up and a one-eighth inch bevel made around one face, as shown in the drawing. It should then be sandpapered carefully with No. 0 sandpaper and stained and waxed, or stained, filled and waxed as desired.

A small clip such as is used for hanging maps may be used for hanging this mount or a small screw eye may be used. The calendar should be glued in place and the thermometer held in place by brads.

Owl Match Box.

This project makes an attractive Christmas gift and is a good project for high school bench woodwork. A pattern should be made from a full size drawing and the outline traced on the wood to be used. Any wood which will take a good finish may be used. Three-ply veneer works very well or solid stock from one-fourth to one-half inch in thickness. The design may be sawed out on a band-saw or jig saw or with a coping saw. The match box may be turned out on a lathe

and the cylindrical box thus made may be cut in half and each half used for a match box. This should be glued in place and a piece of sandpaper glued on as shown.

A FOUNDRY CUPOLA.

Carl H. Hoerner, Saginaw, Mich.

The accompanying drawing and the following sketch of a foundry cupola were inspired by an article which appeared in the *Magazine* for April, 1918.

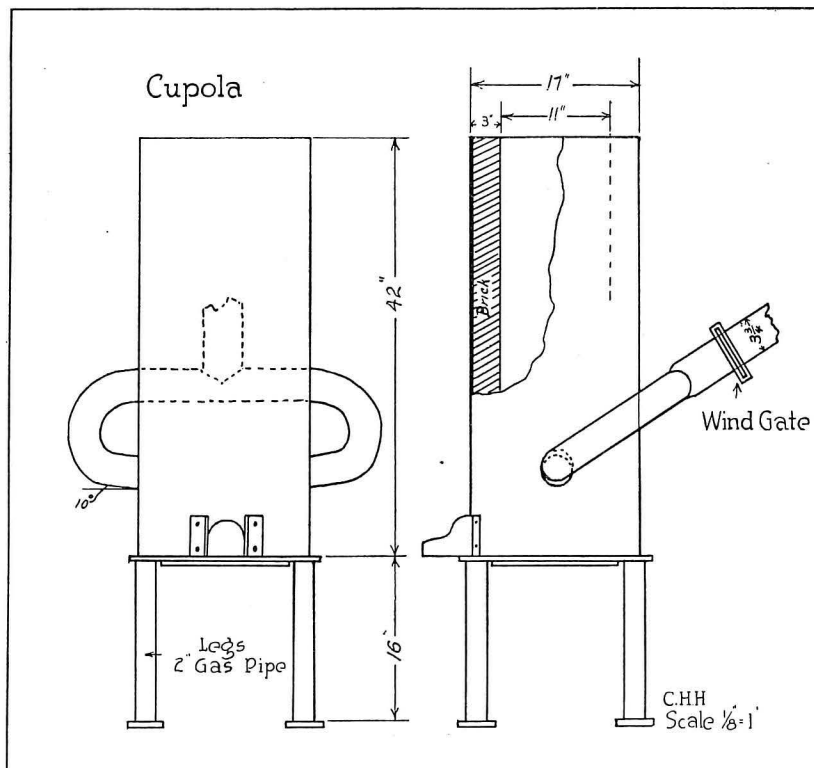
In July, 1916, the writer erected in the Saginaw High School, a small cupola which has since given splendid satisfaction. The cupola is 17 inches in diameter on the outside and is lined with three-inch cupola brick. The inside diameter of the cupola is 11 inches and the total inside height is 3 feet, 10 inches.

The cupola is equipped with two tuyeres, placed 7 inches from the bottom plate on opposite sides and inclined downward at an angle of about ten degrees. They are equipped with a windgate attachment for regulating the blast. The tuyere system could be improved by having a windbelt with several tuyeres of smaller size. As Mr. Soderstrom states in his article, it is necessary to have a gentle blast of air in a small cupola. The following table gives the results of three typical heats:

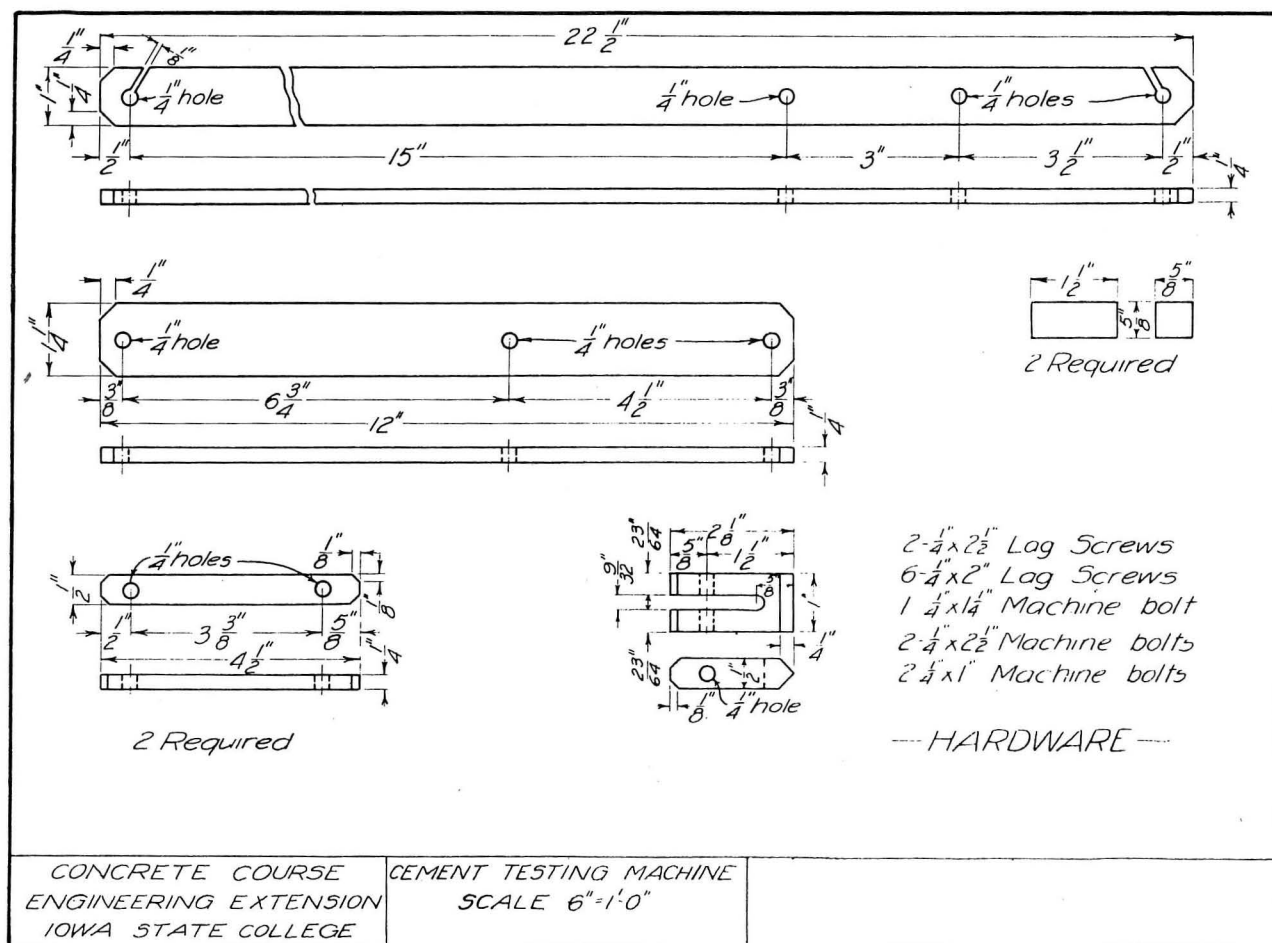
| Time of lighting before blast | Coke in bed charge | Iron used in pounds | Fluidity of iron |
|-------------------------------|--------------------|---------------------|-----------------------------------|
| One Hour | 38 lbs. | 100 lbs. | Too dull for casting. |
| One-half Hour | 42 lbs. | 90 lbs. | Metal fit for medium casting. |
| One-half Hour | 45 lbs. | 100 lbs. | Metal hot, fit for light casting. |

In heat No. 3 the blast was put on and allowed to blow for five minutes before charging the iron as is the custom in a large cupola. The first top of the iron was poured in a sand bed and allowed to cool sufficiently and was then returned to the cupola. The coke used is Connellsville, broken to the size of walnuts. The iron consisted of old automobile cylinders and unburnt stoveplate scrap, all broken very small.

The users of small cupolas will find it to their advantage to put on the blast from two to five minutes until the cupola is thoroly heated, before charging the iron. This insures hot iron and better results.



Details of Small Cupola.



A SIMPLIFIED CONCRETE TESTING MACHINE.

Henry Giese, Iowa State College, Ames, Iowa.

The accompanying drawings illustrate the details of a concrete testing machine developed in the author's classes in connection with an experimental course in concrete. The drawings are sufficiently detailed so that description of the parts is unnecessary. The use of the machine was described in the Magazine for February, 1918 (pages 47-49).

AN AIRPLANE MODEL.

M. F. Bussewitz, Waukegan, Ill.

The airplane model, illustrated in the accompanying drawing, has become quite popular among the younger boys in the Waukegan schools. Many of the boys have fastened the airplane to the handlebars of their bicycles.

The model is entirely made of wood from cigar boxes or other thin, soft woods. The proportions of the design may vary according to the type of machine which interests the

boys, from the graceful French monoplane to an Italian bombing triplane.

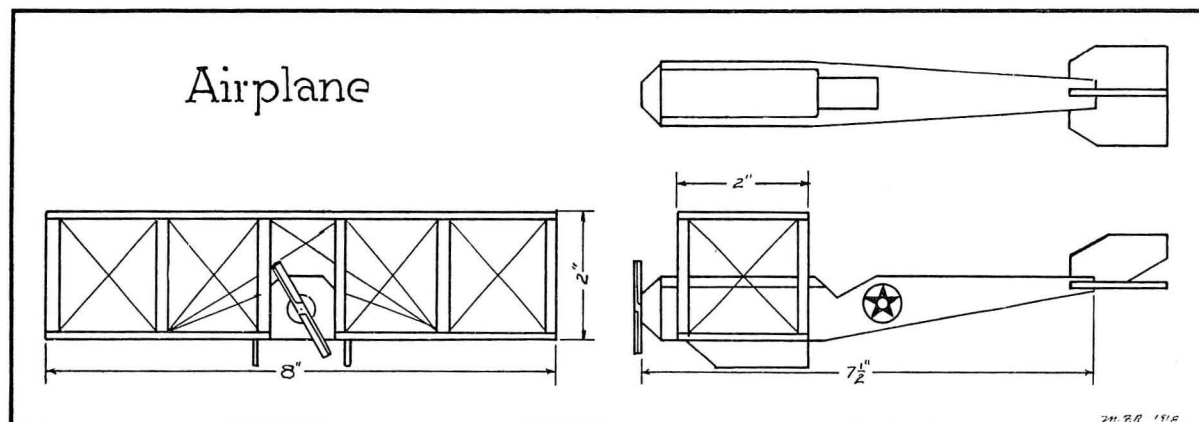
By enlarging the vertical rudder and mounting the model on a base, it becomes an attractive weather vane.

ISSUES MANUAL TRAINING LEAFLETS.

The Department of Development of the Junior Membership of the American Red Cross has just issued a set of 34 manual training leaflets containing complete drawings, bills of material and specifications for the making of various pieces of furniture for use in Red Cross rest rooms and hospitals. The leaflets include the familiar tables, tabourets, etc., which were devised a year ago by Mr. J. N. Rule, director of manual training in the Schenley High School, Pittsburgh, Pa.

Directors of manual training may obtain copies of the pamphlets by addressing the Red Cross at Washington, D. C.

It is desirable that before undertaking the making of problems instructors and supervisors obtain definite instructions for the shipping of such pieces of furniture as they make.



DETAILS OF AIRPLANE.

WAR WORK IN ST. LOUIS.

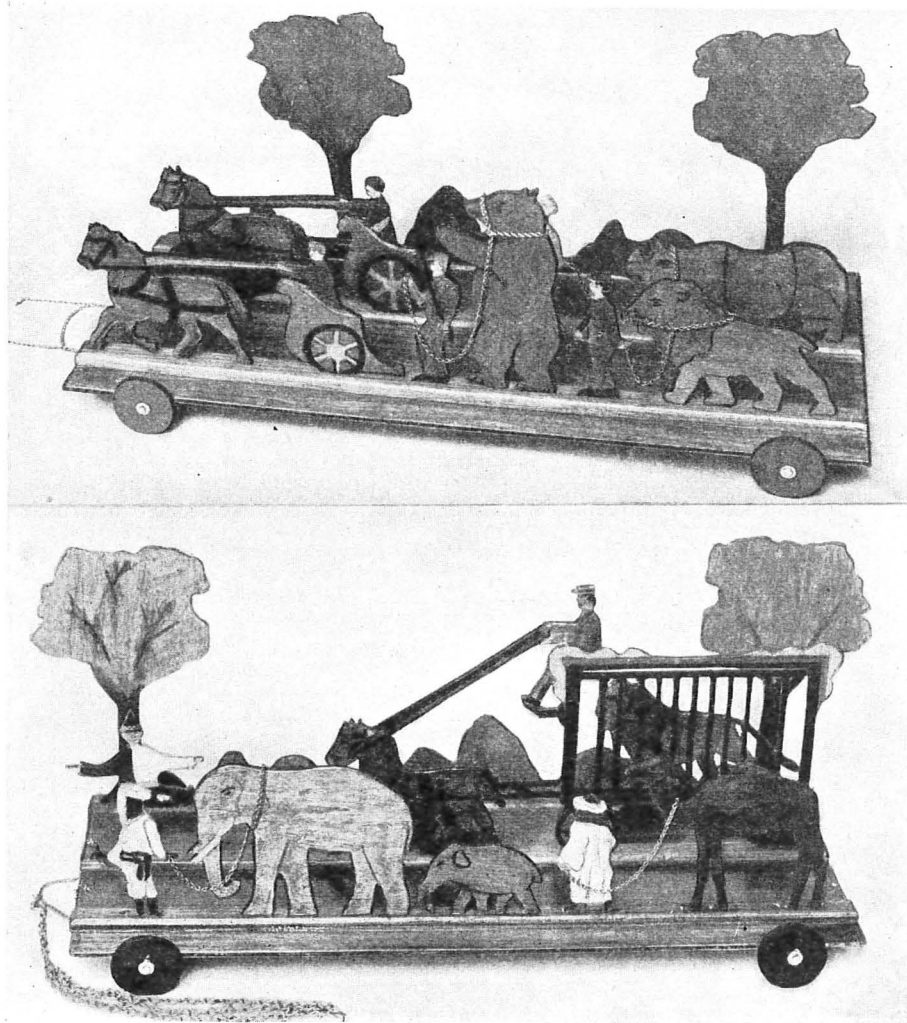
War work in the St. Louis schools is the title of a magnificent volume issued by the department of instruction of the St. Louis Board of Education. Contrary to general belief that the war would have a disastrous effect on the schools, it is shown that the exact opposite has been the case. The St. Louis report shows that war with its resultant activities has stimulated a desire to learn on the part of nearly all pupils in practically all subjects, and these activities have been the motive for doing the best possible kind of school work.

The drawing, household arts and manual training departments of the schools benefitted materially thru the special activities and the new interests which war work developed.

have utilized their study of the thrift school gardens in making home thrift gardens which will provide money for the family and money with which to buy thrift stamps.

The sewing and cooking classes contributed most to the great volume of war-relief work done by the schools. To illustrate, the high schools alone turned out a total of 4,906 pieces. A total of 8,675 knitted articles were made and distributed to soldiers and sailors thru the Red Cross knitting shops. Outfits included 905 filled cheer bags, 150 navy kits and 550 soldier kits all filled, 400 kits unfilled, 115 gun wipes, 4,000 swab sticks, 8,300 trench candles, 65,166 surgical dressings and 1,068 paper doll sets for French and Belgian orphans.

The Christmas cheer bags contained a pair of socks, a handkerchief, a towel, soap, toothbrush and powder, comb, pipe, cigaret papers, tobacco, chocolate, deck of cards and one



Toys Made for Red Cross Christmas Sale in Milwaukee Schools. Miss Emily Dorn, Supervisor.

In the grade manual training centers comparatively little was accomplished up to June last, but in the high schools considerable furniture was made for Red Cross and Y. M. C. A. use. This work is being continued in the fall.

Drawing is a subject in which interest has been intensified by the war spirit. The principal work has been along the lines of thrift, Red Cross work and Liberty Loan drives. Many posters have been made for the purpose of giving publicity to the various movements and of educating the people of the home communities to the necessity of responding to all the requests of the government for co-operation in the task of carrying on the war.

School gardens, for several years a most practical part of school work, now afford new problems in drawing, reading, composition, arithmetic and nature study. They have provided much valuable food for the families of thrift pupils while the surplus has been marketed and converted into cash to swell the funds of the Junior Red Cross. Many children

other game, a tablet, a package of envelopes, a pencil, a trench mirror, a scrapbook and a Christmas card. The cost of each bag was between \$1.25 and \$1.50.

With the Food Administration the schools co-operated heartily. Not only have the school lunchrooms complied with all requests of the government, but the children have been instrumental in carrying the message home and seeing that the homes also carried out the request of the government. To the Hoover pledge 127,934 signatures were obtained.

STATEMENT CONCERNING VOCATIONAL GUIDANCE.

The vocational counselors of the high school at Somerville, Mass., in December last, submitted a comprehensive report covering their work for the fiscal year 1917. The report, which was issued in connection until the annual report of the school board, is as follows:

"The counselor for girls was at work during the entire year; the counselor for boys, since his appointment in Sep-

tember. In all the work the counselors recognize with appreciation the assistance of the faculty committees on social service and on vocational guidance, as well as the co-operation of all the teachers in the development and improvement of the advisory system.

Advisory System.

"During the year the advisory system was appreciably strengthened. It was believed that students are not always in position to choose an advisor wisely in the first year because of lack of acquaintance with the teaching staff. The first year advisors, therefore, were selected for the students by a committee of teachers, preference being given to the home room teacher. At the end of the first year, the students were free to select an advisor for the remainder of their school career. It was believed that better results would be secured by this method. It was planned to make the advisor assume a greater share of responsibility for the individual student. In addition to monthly conferences a special period once a month for advisors, parents and pupils

Forestry, farming, salesmanship, advertising, secretarial work, stenography, bookkeeping, office work, dressmaking, domestic science, music and nursing. Girls studying nursing visited the Massachusetts General Hospital.

College preparatory students filled out questionnaires for the head of the course, who had talked to the group and had held individual conferences with those seeking information.

AN ACHIEVEMENT IN HOUSE BUILDING.

The Colonial mansion illustrated on this page is entirely a school product from the first sketches for the plans to the final bit of finish.

The building was designed, constructed and furnished as a class project by the students of the State Normal School, Warrensburg, Mo., under the direction of Mr. August Ahrens, professor of industrial arts education.

The house is in every respect hand-made. Mr. Ahrens drew the original sketches of the house, and with his students,



HOUSE AT WARRENSBURG, MO.

Designed and Built by Students of the Missouri State Normal School.

was found desirable. During the past year a step forward was taken by reducing the number of students to each advisor from 35 to 25.

Vocational Information.

Vocational information was given in various ways as, for instance:

1. Lectures by prominent men and women.
2. In connection with the study of English.
3. In connection with the high school library, thru books on vocations, and catalogs of colleges, schools, etc.
4. Study of occupations.

Freshman pupils were required to study occupations. Classes met once every two weeks, and were in charge of the counselors. This arrangement gave the counselors an opportunity to come in contact with every pupil at the beginning of his high school career.

Lecturers who spoke to the whole or different sections of the school during the past year included the president of Boston University, the membership director of the Red Cross, the dieter of the Massachusetts General Hospital, advertising managers, public accountants, the superintendent of schools, insurance men and college educators.

Thru the English department junior classes prepared compositions and gave talks on the following occupations:

worked out the details and made the complete working drawings and specifications. Only one part of the actual construction was not done by students. This was the pouring of the concrete for the foundation and the stuccoing of the house on patented wood lath. The students, however, observed both these operations and learned the nature of the materials, methods of mixing and means of application. The young women in the household arts department of the normal school also observed the progress of the work during the several construction stages.

The members of the woodworking classes built the framework of the house and did all the general carpentry work. The students in the machine woodworking classes manufactured all the inside and outside trim, including all the window casings and the built-in cabinets and cases, stairways, mantels, etc. All lumber was purchased wholesale in rough dimensions and was manufactured into the finished forms. The students also did the painting, staining and varnishing of the outside and inside woodwork.

Not the least interesting feature of the work was the study of old colonial residences and of details of exterior and interior trim. Especial attention was given to mouldings, stairways and mantels, and the designs used in the house were adapted from original colonial samples.

NOW, ARE THERE ANY QUESTIONS?

This department is intended for the convenience of subscribers who may have problems which trouble them. The editors will reply to questions, which they feel they can answer, and to other questions they will obtain replies from persons who are competent to answer. Letters must invariably be signed with full name of inquirer. All questions are numbered in the order of their receipt. If an answer is desired by mail, a stamped envelope should be enclosed. The privilege of printing any question and reply is reserved. Address, Industrial-Arts Magazine, Milwaukee, Wis.

The Use of Cement in Modeling.

862. Q.—Can you tell me where I can get cement for the work in pottery instead of using clay? What kind of paint do you use on cement and where can you get it?—H. H.

A.—Portland cement, altho more adaptable to cast or poured work, can be used successfully in the modeling of flower pots, urns and articles of a similar nature. It has this advantage, in that no kiln or oven is required for baking or hardening it, as in the work with clay. Ordinary gray or white Portland cement, which can be purchased of any building materials dealer, should be used.

In modeling an object of cement, it is necessary to first shape some means of reinforcement to approximate closely the shape of the object to be made. Light, close-meshed chicken fencing will answer the purpose. It must be securely tied and braced so that it will not be pulled out of shape by the weight of the mortar. Then the mortar, composed of one part Portland cement, with from one to two parts of fine sand, should be thoroly mixed with enough water to make it of plastic consistency. The sand should be free from any dirt, clay, or other foreign substance. The maximum size of the particles of sand should be about one-eighth of an inch in diameter. The addition of a very small quantity of ordinary washing soda in the mixing water will tend to make the cement set up very rapidly and will enable one to work quickly. As soon as the mortar has been thoroly mixed, it should be plastered on to the reinforcement and molded to the desired shape. Care must be exercised in handling the object after molding. For the first 24 hours it should either be covered or stored in a moist place, so that evaporation of the moisture will be prevented. At the end of that time it would be well to immerse it in water for a period of four or five days. This will insure its proper hardening. In circular work the use of a template will oftentimes facilitate the shaping of the object. The template should be made of tin or sheet iron. The axis about which it rotates should be carefully centered and then, as the mortar is built up, the rotation of the template cuts it to the true shape.

Instead of paint for decorating the surface of the object, more desirable and permanent results may be attained by using a color pigment which is mixed with the cement. As a rule, only mineral colors should be used if permanent colors are desired.

The cement, sand and coloring matter should be mixed dry. It may be well to experiment a little at first in order to determine how much coloring matter is needed to produce the desired shade. The addition of water always makes the mortar appear darker than it will when hardened.

By using from four to five per cent (by weight) of coloring matter as compared to the weight of the cement, the following colors may be obtained:

Carbon black or lamp black produces a gray, which varies according to the amount used.

Raw iron oxide produces a bright red.

Roasted iron oxide produces brown.

Yellow ochre produces buff.

Ultra marine produces blues.

Chromium oxide produces green.

Other very pleasing effects can be produced by using different aggregates, such as marble dust, granite chips and mica. These may be used in conjunction with the colored matter or without, as may be desired. In order to bring out the beauty of the aggregate, the surface of the object should be scrubbed, with a weak solution of muriatic acid. The object should then be thoroly washed, so that no acid may remain upon the surface.

Very pleasing results may also be obtained by tooling the hardened surface of the concrete. Particular attention should be paid to the proportioning of the mixture if such a finish is desired. Sufficient cement should be used in order that all the voids or air spaces may be filled; thus bonding all the particles in a solid mass. The concrete should be allowed to harden thoroly so that the particles of the aggregate will

not be broken from the surface. A bush hammer, such as is used by stone dressers, may be used. Careful hammering will slightly cut the aggregates, giving the appearance of cut stone to the concrete.

It is also possible to secure a polish on concrete surfaces very similar to that obtained upon natural stones, such as granite and marble. In order that as large an amount of aggregate as possible may be exposed, it is necessary to carefully grade the material so that the least amount of cement necessary to bond the particles may be used. Polishing is done by means of the various grades of carborundum stones. The final polish is obtained by rubbing with oxalic acid.

It may be well to note that if a surface paint is desired, it can usually be purchased of any paint or building materials dealer. Surface paint or enamel can be successfully applied to perfectly dry surfaces only, that is, concrete thoroly cured and then allowed to dry. It is better to use several thin coats than one or two thick ones.—R. E. Watkins, Educational Bureau, Portland Cement Association.

Japanese Lacquer.

865. Q.—Can you give me any information on Japanese Lacquer? I have an iron bedstead and wish to gild it. I am wondering if lacquer will work over the gilt.—G. G. K.

A.—Japanese and Chinese lacquers are practically beyond the purchasing power and the technical skill of the average man. A clue to their character and the difficulty of applying them to furniture will be appreciated if the questioner will read the article on "Japanese Lacquer Screens," by Charles D. Thomson, in Good Furniture Magazine for June, 1918 (p. 337-352).

Genuine lacquer is made from an oriental gum and is at present prohibitive in price. It must be applied in a dark room and its consistency is such that only the expert can handle it successfully.

The questioner has apparently confused Japan drier with Japanese lacquer. Instead of japan drier it would be best to use a material which is in reality a varnish. For the iron bedstead it will be best to use some good brand of prepared gilt, which can easily be obtained on the market.

Place the metal bed in a room at about 85 degrees F., and leave it there about four hours until the metal reaches a temperature of at least 75 degrees. Then apply one coat of Pratt & Lambert's pale gold size. Use an inch and a half badger brush for the rails and heavy framework and a three-quarter inch brush for the spindles and other light parts.

Start the work with the part least seen and end with the most prominent part. To gain facility in the use of the varnish, finish the tie-rails first. The varnish is light in body and sets up fast so that it is necessary to work quickly and not to brush the material in more than is necessary to level up.

Be sure to finish the spindle or other iron part completely before going on to the next, and carry all the top and bottom framework along at the same time. Sags and drips must be watched for, as they are very easily produced on this kind of work. Allow the bed to dry in a warm room over night and the next day assemble it for use.—R. G. Waring.

Bulletins on Thrift.

870. Q.—Where are the pamphlets of the Committee on Thrift Education, N. E. A., published?—R. B.

A.—Various special bulletins have been issued by Arthur H. Chamberlain, chairman, Monadnock Building, San Francisco, Cal. The same publications may be had from the American Society for Thrift, Mr. H. R. Daniel, secretary, 220 West 42nd St., New York City.

Handicrafts for the Handicapped.

871. Q.—Can you tell me where I can procure a book for invalid or one-hand occupations?—F. M. A.

A.—Hall and Buck's "Handicrafts for the Handicapped," \$1.25, Moffat, Yard & Co., New York, N. Y.

*"The highest in quality is
The lowest in price."*

— ATKINS.

Vocational
Training
Teachers
will be
supplied
with our
"Saw Sense"
books, free,
if they will
write for
them.
They tell
you how to
judge a
saw, how
to set and
file them
for results.
Get this
data.

Atkins Always Ahead

Finest on Earth

Starting Them Right

This picture represents a class in Carpentry in a Vocational Detachment—Skilled men, who are helping to Win the War. Every man shown is an enthusiastic advocate of

ATKINS Silver Steel SAWS

Atkins Saws—made of "Silver Steel"—our exclusive formula have, by their high quality, proved that they are the best to use where conservation and efficiency counts.

Win the War—Buy Liberty Bonds until it helps

Write for our literature, addressing nearest point below

E. C. Atkins & Company, Inc.

Established 1857
Home Office and Factory, Indianapolis, Indiana

Canadian Factory, Hamilton, Ontario Machine Knife Factory, Lancaster, N. Y.

Branches carrying complete stocks in all large distributing centers as follows:

| | | | | | | |
|---------------|---------|-------------------|------------------|------------------|---------------|----------------|
| Atlanta | Chicago | Memphis | Minneapolis | New York City | New Orleans | Portland, Ore. |
| San Francisco | Seattle | Washington, D. C. | Vancouver, B. C. | Sydney, N. S. W. | Paris, France | |

We have
some very
interesting
literature on
saws and
tools best
adapted for
Vocational
Schools.
Ask us to
send our
catalog
of Saws,
Saw Tools,
Machine
Knives, and
specialties.
Address
the home
office.

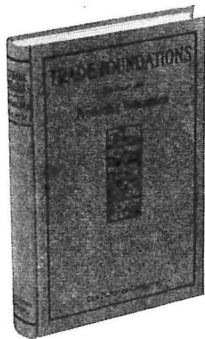
"Saw Sense" contains information vital to Vocational Instructors.

Sent Free on Request

Trade Foundations

Based on

Producing Industries



A Product of Many Minds

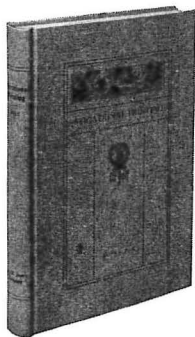
The Authors —

- Introduction — *T. N. Carver*, Professor of Political Economy, Harvard University.
- Sec. 1—Occupations—*R. H. Rodgers*, Director of Industrial Arts, Stout Institute, Menomonie, Wis.
- Sec. 2—Materials—*J. I. Sowers*, Vocational Director, Vincennes, Indiana.
- Sec. 3—Tools—*L. Day Perry*, Supervisor of Industrial Work, Joliet, Ill.
- Sec. 4—Operations—*Charles W. Sylvester*, Vocational Director, Hammond, Ind.
- Sec. 5—Drawing—*Geo. M. Brace*, Director of Industrial Work for Grade and High Schools, St. Paul, Minn.
- Sec. 6—Prevocational Shop Work —
Earl D. Hay, Instructor in Industrial Dept., State Normal School, Oshkosh, W's.
- Raymond C. Keople*, Supervisor of Manual Training, Rochester, N. Y.
- R. S. Whiting*, Architectural Engineer, National Lumber Manufacturers Association, Chicago, Ill.
- J. E. Ray*, Instructor of Bricklaying, Stout Institute.
- H. Colin Campbell*, Director of Editorial Bureau, Portland Cement Association, Chicago, Ill.
- H. F. Good*, Instructor of Gas Engineering, Stout Institute.
- J. J. Ritter*, Director of Industrial Work, Ft. Wayne, Ind.
- H. H. Harrison*, Director of Industrial Work, Marshall, Mich.
- H. T. Purfield*, Instructor of Forge and Foundry Work, Ft. Wayne, Ind.
- E. C. Graham*, Vocational Director, Evansville, Ind.
- H. C. Milnes*, Instructor of Machine Shop Work, Stout Institute.
- R. F. Jarvis*, Instructor of Forging, Stout Institute.
- R. W. Hastings*, Practical Arts Department, Chestnut St. Junior High School, Springfield, Mass.
- R. W. Austin*, Welding Expert, Chicago, Ill.
- C. S. Goldsmith*, Supervisor of Industrial Arts, Carlstadt and Oradell, N. J.
- Edward F. Worst*, Supervisor of Elementary Manual Training and Construction Work, Chicago, Ill.
- F. B. McElroy*, Instructor of Industrial Arts, Washington School, Indianapolis, Ind.
- Ralph W. Polk*, Vocational Director, St. Joseph, Mo.
- Frank M. Treat*, Instructor of Industrial Arts, Indiana University, Bloomington, Ind.

For Grades 7-8-9.

List \$1.25

VOCATIONAL PRINTING



By **RALPH W. POLK**,
Director of Vocational Instruction,
St. Joseph, Mo.

A selected and systematic compilation of the fundamental principles and essential details of the art of printing which are indispensable to a well-rounded course and are calculated to serve as a practical foundation for the printing vocation.

List \$1.25

Guy M. Jones Company
Educational Publishers

Merchants Bank Building - - - - Indianapolis

THE FUTURE IN INDUSTRIAL ARTS.

Some months ago there was displayed in one of the large high schools of New York City an interesting exhibit of designs made in the elementary schools of Paris. The exhibit was a brave and colorful showing of art products and indicated the insistent efforts made by France in the art education of the next generation. Commenting on the significance of the exhibit in the New York Globe for October first, Dr. James Parton Haney, Director of Art in the New York High Schools, writes:

"The exhibit was more than a collection of children's work. It was a bit of the indomitable spirit of France, mindful even in the agony of war to look to artistic education of her coming generation. France has stood for chaste design and beautiful craftsmanship. She is determined so to stand after the war. Her industrial art schools, now drained of men and students, see women being trained in their studios. She is conserving her forces.

"England is concerned with the same problem, realizing that there is to come after the war a welter of competition in every field in which the applied arts enter. Her talent is being fostered until peace shall see her looms and presses, her lathes and potters' wheels free to contribute once more to the most profitable market in the world. Indeed there is evidence to show that every one of the Allies is alive to this coming struggle for trade, while those who know the Hun need no assurance that he is scheming to make good in this way some of his war losses. Only we in the United States are behind, indifferent, content to let our industrial arts drift as for years they have drifted, to our neighbors' gain and our enormous loss.

Financial Prizes of Peace.

"The stakes in the game are huge, even in these days of gigantic figures. Last year, despite the war, we spent over \$250,000,000 for new furniture, and more than that for carpets, textiles, wallpapers and other interior decorations. Over half a billion for home furnishings alone, to say nothing of other vast sums paid for dress goods, millinery, china, glass, and the multiple products of the lithographic and printing press. All these figures refer to the products of machines, but behind every yard of textile, every roll of wallpaper, every rug and chair was the designer, the man with the pencil, by virtue of whose skill the finished product entered into competition with the work of other designers. More than this. Every yard of cretonne, every curtain, cup, or spoon was bought by the purchaser because the latter thought it, other elements equal, to be the best in design.

"It serves no purpose to sneer at the taste of the public who did the buying. That taste is steadily rising. The demand for things better in color and pattern is continually becoming keener. The American home is a better furnished and better decorated home than it was a generation since, and the American demand is for better designed material in every line from furniture to car "ads."

Need of Vocational Craft Schools.

"This demand will surely grow more imperative. How are we to answer it? We have the talent but it is untrained. Our own markets are great, and others offer. South America is at our own doors. Can we not enter her markets on equal terms with other countries?

"We are a great industrial nation, but one without an industrial art. Until the advent of the war we imported the greater number of our designers. These men were state trained, artist-artisans, selected with care and taught in schools the like of which we do not know. Our source of supply is now cut off for years to come. How shall we make up the deficiency? We have a few professional schools with design and craft courses, nearly all under private auspices. There are scattered classes everywhere. But as for highly organized, well equipped city and state schools for the training of industrial designers, we have practically nothing—no school for art metal workers, none for printers, none for coppersmiths or carvers, none for lithographers, none for bookbinders and none for stained glass makers. Few of our textile schools give adequate training in design, while not a single jewelry center has a school to feed the industry with fresh blood and inspiration.

You can't go wrong when you buy Saws bearing this brand

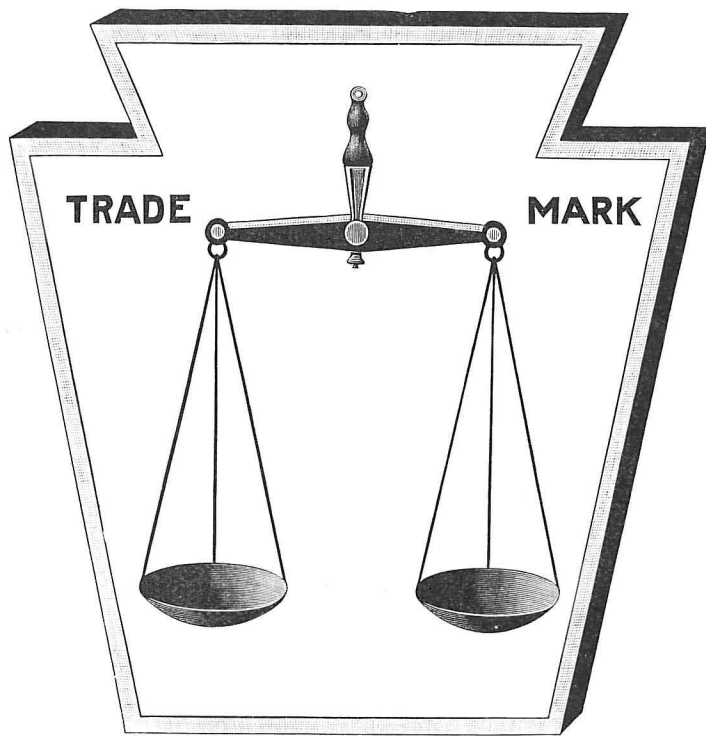
It is the mark placed on saws that have kept pace with the increasing requirements.

It is the mark recognized the world over as signifying absolute worth and reliability.

It is the mark for saws that have stood all practical tests for more than 78 years.

It is the mark of the largest Saw Works in the world.

It is the mark that distinguishes the saws which produce results and profits for you.



HENRY DISSTON & SONS

INCORPORATED

Keystone Saw Tool, Steel and File Works

PHILADELPHIA, U. S. A.

Courses in Arts and Crafts.

"What a contrast is presented by our neighbors in trade? France sees in each large city an industrial art school. Dozens of other schools in the smaller towns serve to aid local industries. Paris has over a dozen craft schools, the great Bernard Palissy School leading with its many courses in the applied arts. London has her central school of arts and crafts housed in a great building crowded with studios, while thruout the metropolis one can find a dozen others for the training of the artist-artisan. England indeed is dotted over with training grounds for the craftsman.

"Several of these, as Manchester, Birmingham, Leicester, are famous for their fine buildings and elaborate equipments. Before the war Austria prided herself upon her state trained designers, while Germany used all her 35 industrial art schools as forcing grounds for the talent she proposed to use in her propaganda to gobble the world's trade.

"Ever since 1850 this race for the applied arts market has been on in Europe. The first great international fair at London showed each exhibitor where he stood and set all in active competition to build up their industrial art schools. Every year since these schools have been growing stronger—better plants, more equipment, higher standards of teaching.

"We have been blind to the lesson taught us. Now is no time for recrimination or academic discussion of the reasons for our shortcomings. We must wake up to the fact that it is necessary for us to foster our own talent if we are to have a fair show and play a respectable part in the industrial campaign. This will be started in every foreign country before the last of our boys in khaki are home from abroad.

"We need dozens of applied art schools in this country, the larger with courses in design touching a dozen crafts, the smaller with specific teaching applied to special industries. Paterson should produce a silk weaving school, Attleboro a jewelry school, Trenton a school of ceramic design, and Grand Rapids one for furniture. These are types of schools adapted to local needs. We have the plan for the general school shown us in a dozen cities abroad where new

buildings display lofty studios, handsome exhibition halls, well equipped workrooms and elaborate collections of models. All of these things cost money, but the money spent represents only a fractional percentage of the amount to be reaped in profits in any single year.

Cultivation of Popular Sentiment.

"The industrial arts with us have never been fairly recognized. They have never been cordially encouraged. Our talent has not been conserved. It has sought other fields or has gone to work half trained. Our manufacturing class has been indifferent and our boards of education unconcerned. If we are to have the schools we so greatly need there must be a change in this attitude the country over. The industrial arts need "booming." They must have recognition and encouragement before the gifted will be drawn to the field. But a major mistake can be made in these premises.

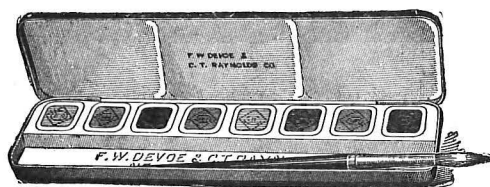
"It is hard to believe that any one body can accomplish the desired end. No one body can—no board of education, no chamber of commerce, or merchants' association. To develop these schools there must first be created public sentiment in their favor. To this end every board of education, board of trade and industrial society should help. Foreign governments subsidize their schools and aid their students with scholarships.

"Our government has been indifferent until the present moment, tho it now seems possible that it may second local effort thru the Federal Board of Vocational Education. But whether the government helps or not, the schools must be brought into being. We have as yet no great industrial art, but we can have one. We have natural resources of untold value. Better than this, we have native resources of talent and character which, properly trained, will enable us to compete with the best the world can command."

During the school year 1917-18 the manual training department of Woonsocket, R. I., completed furniture and household equipment valued at \$1,191.50 at a cost of \$482.51 for material. The work was done under the direction of Mr. E. W. Kempton. The manual arts instruction during the year cost \$10.20 per student.

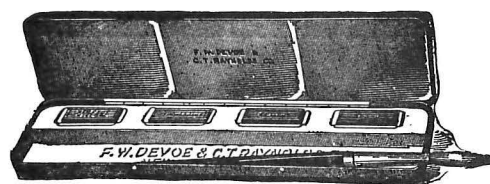
DEVOE School Water Colors

have a uniformity of color, smoothness of texture, accuracy of shade that have made them the standard of excellence for many years.



Box 118

Children learn more readily when they use the best materials, with the name Devoe on them.



Box 122

For Poster and Design Work, in grade, high or normal school, use Devoe Show Card Colors.

DEVOE

New York

Chicago

Kansas City

New Orleans

BRADLEY'S TONAL-TEMPERA FOR YOUR SCHOOLS



**SMOOTHER
BRIGHTER
BETTER**

Colors of distinctive character, giving life and snap to any subject. They provide a medium of the highest standard for effective poster work.

The six Tonal Standards are modified in value to such an extent that they are specially desirable for artistic design work, or for background washes in posters; while the full, rich tones of the more intense colors, used in combination, provide for striking and harmonious contrasts in the details of the poster or picture.

TONAL-TEMPERA COLORS dry quickly and one color may be overpainted with another without disturbing the first surface.

Put up in tubes, 3 1/4 inches long by 1/2 inch diameter. Made in fifteen beautiful colors.

Price, per tube, \$0.15.

WRITE FOR CIRCULAR

MILTON BRADLEY CO.
SPRINGFIELD MASS.

NEW BOOKS.

Vocational Printing.

By Ralph W. Polk. Cloth, octavo, 243 pages, illustrated. Price, \$1.25. Guy M. Jones Co., publishers, Indianapolis, Ind.

Printing as taught in the best trade and continuation schools at present is quite a different subject from the printing which was offered even three or four years ago. The latter was a stilted academic type of instruction that forgot entirely the larger problems and possibilities of the subject in insisting upon the niceties of a few elementary "processes." The present book expresses the new viewpoint in the teaching of printing. It offers a very complete course in strictly vocational work which, accompanied by prudently directed shop practice, will go far toward making an apprentice a thoroughly grounded, skilful journeyman printer.

The author has divided the subject into four main parts and has judiciously selected the main principles and processes under each. Part One takes up the fundamental operations of setting type, proofreading, imposition and lock-up and simple presswork. In Part Two the more advanced principles of composition are explained. The use of layouts opens the first chapter as a preliminary to the study of art principles in typography, machine composition and advertising. Part Three discusses color and the special forms of printing which are commonly met in job offices. Part Four takes up the theory of lettering, the principles of type design and cost systems.

The author has appreciated better than any previous writer of a text on printing that apprentices and other young students of printing are not mature men and he has kept the text simple and brief, without sacrificing completeness.

The work is sufficient for two years in an all-day school and for weekly half-days in a full four or five-year apprentice course. The illustrations are complete and the examples of good form are really worth while specimens of the best present day work. As a whole, the book is itself a good example of textbook printing.

Elementary Forge Practice.

By Robert H. Harcourt. Buckram, 148 pages. Price, \$1.50. Stanford Book Store, Stanford University, Cal.

This book has been developed from a syllabus used by the author during a period of years and shows on every page the marks of successful teaching. It is difficult to say whether the plates outlining the well graded series of exercises, or the carefully, accurate text is the better feature of the book. Both text and plates are of the highest standard and provide a thoro course in the elements of forge practice. The descriptions of materials and tools are delightfully clear and brief. The book commends itself strongly for vocational and technical schools and for the manual arts department of high schools.

Little Tales of Common Things.

By Inez N. McFee. Cloth, octavo, 300 pages. Price, \$1.25. Thomas Y. Crowell & Company, New York, N. Y.

The production of thirty-seven "common things"—varying from beans to steel needles—is described in this interesting supplementary reader. The chief charm of the book is the simple style which the author has adopted; the chief value of it is the industrial significance of the information which is conveyed to children.

Patriotic Selections

Edited by Edwin D. Shurter. Cloth, 177 pages. Price, \$1, cloth; 50 cents, paper. L. A. Noble, publisher, New York, N. Y.

These selections have been made principally from current public addresses and magazine verse.

Projects in Farm Mechanics.

By E. A. Funkhouser, Director of Manual Arts. Paper, 32 pages. Bulletin, Vol. 1, No. 3, John Tartleton Agricultural College, Stephenville, Tex.

Well established lines of carpentry adapted to farm use are followed in this suggestive pamphlet. The twenty plates, accompanied by descriptive text, suggest a variety of things that are needed on every farm. Each has the merit of having

been worked out under school conditions and of having served in use on typical farms. It is to be hoped that the author will be given an opportunity to work out his plates in larger size and to add to them specific bills of materials so that details of construction will not be left to the immature teacher's imagination.

Industrial and Applied Art Books.

Edited by Elmer E. Bush and Florence Reid Bush. Advisory Editorial Committee: Walter Scott Perry, Florence H. Fitch, Walter Sargent, Frederick G. Bonser. Atkinson, Mentzer & Co., New York, Chicago, Atlanta, Dallas.

A set of eight texts; one for each of the eight grades of the public schools; directed to the study and practice of industrial and applied art.

Few teachers of the variety of fine arts effort attempted in the common schools can conduct their work well without the use of texts. Under the recent introduction of applied and industrial art lessons the need of texts becomes imperative. On the other hand no texts on the fine, industrial and applied arts can give more than a series of exercises which suggest a method of presenting lessons bearing on the most important elements of such a wide subject. These suggested exercises must be carefully selected to cover the field as well as possible and to be adapted to each of the grades in a progressive course of instruction.

In the study of form thru illustrative effort these new texts make much and consistent use of paper cutting, leading up to rendering in soft mediums such as chalk, charcoal and pencil. Water color painting is conspicuous by its absence. Pencil rendering is illustrated by excellent examples of work which should help the children acquire some skill in this splendid medium if they can be given considerable practice in it. We wonder if they can and will.

Design is given a prominent place in these texts. Here the suggested use of paper cut forms is good, tho some of the examples shown seem a little complex.

Color study runs thru the series and is directed to give understanding of the combinations of colors for harmonious effects. The reproductions of color are excellent but again some of the compositions are fantastic and unique rather than of beautiful simplicity.

Lettering is persisted in, as it may well be, and paper cut letters are adjusted to simple composition before the letters are studied for their constructive proportion and style.

The industrial applications of design are well illustrated. We wish the books had a simpler and more legible cover. We wish some of the designs were better examples of the finest art from which nothing can be removed without detracting.

Vocational Guidance.

By E. W. Weaver. Paper, 16 pages. Price, 50 cents. Uplift Publishing Company, Philadelphia.

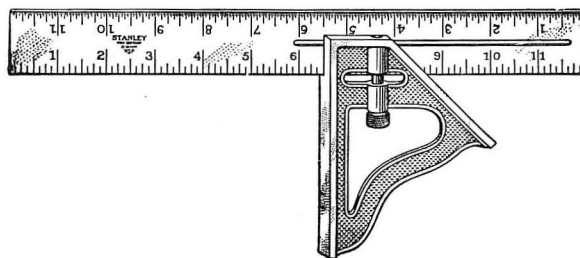
The aim of this pamphlet is to save the young from making a mistake in choosing a vocation. As society becomes more complex it becomes more and more difficult to undo such mistakes and it is wise for parents, schools and society to reduce the number to a minimum.

While plans based upon personal characteristics and preferences should be made carefully and early, it is suggested that entrance upon an active career be postponed as long as possible, since training increases the future possibilities of workers.

Printing as a Rehabilitation Subject for Sick and Wounded Soldiers. By Frank K. Phillips, Superintendent of the Education Department of the American Type Founders Company, Jersey City, N. J. Mr. Phillips has rendered a valuable service in making this very complete statement of printing as a rehabilitation subject for sick and wounded soldiers. He shows very clearly the therapeutic value of printing, its utility in teaching English and the possible branches of work into which the disabled soldier may enter after he has recovered. The very brief statements of the various types of work in the printing shop will be useful to teachers in rehabilitation hospitals. The booklet has a wider service than its title would indicate, in that it will be of use to teachers in the permanent rehabilitation schools which are to be established for industrial workers after the war.

Interior Decoration and Industrial Art Design. These courses in design are open to men and women who enroll at Columbia University, New York City, and who pay the tuition of \$25, plus a University fee of \$5.

Stanley Tools



STANLEY ADJUSTABLE TRY AND MITRE SQUARE No. 21

An important addition
to the long line of
STANLEY TOOLS
especially adapted for
Manual Training use.

The *Blade* is adjustable and as it can be reversed, provides any size of try or mitre square within the capacity of the tool. In reversing, it is not necessary to remove the blade from the handle, consequently the tool is always assembled and ready for use.

The edges of the *Blade* are machined, graduated in 8ths, 16ths and 32nds of inches, and the tool is square inside and out.

MANUFACTURED BY

STANLEY RULE & LEVEL CO.
NEW BRITAIN, CONN. U.S.A.

GOLDSMITHS CRAFT WORKERS

Material and Findings
In Gold and Silver



Write for Catalog

HERPERS BROS.

New York City and Newark, N. J.

TEACHERS

OF THE

METAL CRAFTS

Jewelry, Silver and Copper Work

Our equipments and materials have been in use by Craft workers, and in Schools for the past ten years.

We are the originators of "ROSE" Anvils and Hammers.

MATERIALS OF ALL KINDS

Metals in Sheet or in Wire.

Solders, Stones, Enamels, and Findings.

We can supply all your needs. No order or request too small to receive prompt attention.

Send for New Catalog Now in Preparation

Metal Crafts Supply Co.

PROVIDENCE, R. I.

Arts and Crafts Teachers

And Workers in Precious Metals

We make a specialty of supplying you with:

| | | |
|--|---|-----------------------|
| All of these in sheet or wire form | { | Sterling Silver |
| | | Pure Silver |
| | | Pure Gold |
| | | Gold made up in all |
| | | Karats. Also |
| | | Red, Green, White and |
| | | Yellow Gold |
| | | Silver Solder |
| | | Platinum and Platinum |
| | | Solder |

Our prices are reasonable.

Credit accounts extended to instructors and schools.

Prompt attention given to all orders.

Send for Price List and Weight Tables, Dept. A.

THOMAS J. DEE & CO.

5 South Wabash Ave.

CHICAGO, ILL.

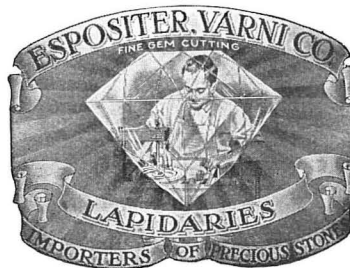
Our reliability as lapidaries insures you an ideal service from our

DIAMOND CUTTING DEPARTMENT

which has just been established.

From time to time our many friends already acquainted with the very satisfactory work done by us in the cutting of colored stones, have sent us diamonds for recutting, etc. This led to the inauguration of this new department. Your diamond polishing, recutting, repairing, refinishing, etc., will be in capable hands. *Let us estimate on your work.*

Diamonds
Repaired
Recut
Repolished



Diamonds
Bought
Sold
Appraised

ESPOSITER, VARNI CO.

INCORPORATED

45-49 JOHN STREET
NEW YORK

NEWS AND NOTES FROM THE FIELD.

Albany, N. Y. The household arts department of both grade and high schools has been put on a war basis. The cooking classes have been reorganized for intensive instruction in the preparation and use of war-time substitutes and dietaries. Practically all the products of the sewing classes go to the Red Cross, in the form of garments for refugees, etc.

The boys' classes are being continued with practically no change. The courses include woodworking, light bench metal work, concrete, electricity, printing, and mechanical drawing.

A complete new machine shop is being installed in the Albany Vocational School. The evening classes for workers include the following courses: Cabinet making and power machine operation for woodworkers, pattern-making, elementary mechanical drawing, drawing for machinists, carpenters and architects, sheet-metal workers and drawing and mathematics for brick-layers, masons and plasterers, plumbing, machine shop practice, electricity, automobile and gas engine theory, show card writing, printing, steam boilers and engines, mechanics, retail selling, radio and buzzer work, millinery, dressmaking, cooking, household chemistry, and commercial courses.

The work is under the supervision of Mr. E. A. T. Hapgood, director of vocational education.

The Indianapolis school board has filed with a special committee of the Indiana State Council of Defense its reply to the charge that it has neglected its duty with reference to the federal vocational education program. The board replies that the charges are groundless and that such retrenchments as have been made in the manual training and vocational departments have been due entirely to a lack of funds. The board calls attention to a deficit of \$120,000 in the manual training fund. The resignations of a number of teachers and of the director of vocational education are explained by the board as due to higher wages paid in the war industries.

The Vincennes "Sun" of Vincennes, Ind., at the beginning of the fall term, devoted a page of its paper to the schools. The material for this page was prepared and edited by the vocational department as a means of bringing to the attention of the parents and pupils the opportunities for education to be obtained in the schools. All the items were of a vocational character with a bearing on the future value of an adequate education. Mr. J. I. Sowers of the vocational department had charge of the editorial work.

The Illinois State Normal University has adopted a unique method of extending its teacher-training activities by organizing correspondence courses in various college subjects. While a majority of the courses are strictly pedagogical, a number of general courses are also offered. Thus the department of manual training has organized a complete course in mechanical drawing corresponding to a full year's work in this subject. The course includes working drawings, lettering, geometrical drawing, problems in projection, intersections of solids, development of surfaces, etc.

No prerequisites are made for taking the course by mail, but credit is issued for successful completion of the problems offered. The course is so arranged that it may be followed by a course in machine drawing, which is shortly to be organized for correspondence study. Students who take drawing courses are offered personal criticism and advice by mail.

The State Normal and Training School at Buffalo, N. Y., is offering evening courses for the training of teachers for industrial schools. A regular two-year course in the theory and practice of industrial education is provided for qualified persons from the trades who desire a license to teach some specific trade or industrial occupation in a day or evening vocational school. Graduates of the course will be given the state diploma and license permitting them to teach the grade selected in day or evening industrial schools of the state of New York.

The State Normal School at Harrisonburg, Va., has been designated by the Federal Board of Vocational Education as one of the state normal schools to participate in the fund appropriated by Congress for the training of teachers in home economics. A total of 37 students have already registered for the first year of the course, which comprises four years of college work.

The school also offers a two-year course in home economics for teachers of elementary schools. Students taking the course receive instruction in foods, shelter and clothing. Miss Frances E. Sales is head of this department, with five other instructors and five assistants as co-workers.

Members of the senior class are expected to live in the practice house for a period of twelve weeks and are expected to do practice teaching for 24 weeks in the schools of the city and surrounding county, for which the county appropriates money for traveling expenses and the normal furnishes the conveyance.

Bradley Polytechnic Institute at Peoria, Ill., has been re-

SIMONDS

Saw Making

It's our study as well as our work. Saws are made better each year. Simonds Saw free booklet explains How to File a Hand Saw.

Simonds Manufacturing Company
 "The Saw Makers"
 Established 1832
 FITCHBURG, MASS.
 5 Factories 11 Branches

The Simonds Band Saw
Simonds Hand Saw
Simonds Circular Saw

"I Tell You It's A Great Saw"

The Simonds Saw
 Fitchburg, Mass. U.S.A. Chicago, Ill. U.S.A. London, England

School Drawing Books
Practical Drawing
Modern Arts Course

School Movement Writing Books
Practical Writing Course

School Art Materials
Schoolroom Pictures
School Supplies

*Write nearest agency
 for prices and catalog*

PRACTICAL DRAWING COMPANY

Dallas

Chicago

Atlanta

**INDUSTRIAL
 AND APPLIED ART
 BOOKS**

**A MEMORABLE EVENT IN
 SCHOOL PUBLICATIONS**

Came from the press August 20, 1918

First edition 500,000 copies

Second edition necessary

A *two months'* record unexcelled

Cities, villages and rural schools are using them
 Acknowledged as the only *real* industrial books
 for grades published

12 organized and graded courses in each book

48 pages (4 in color) in each book

2 editors, 4 members advisory editorial committee,
 and 24 contributors

Which make them *national*, not *local*.

Miss Carrie L. Wilkerson, Supervisor of Drawing,
 Minneapolis, Minn., says:

"I am much pleased with the books, not only for what they actually contain in beauty of design and color, but for their appeal to the imagination and "play spirit," and for their *real industrial* significance. The suggestions they offer are refined and beautiful, and should stimulate the initiative of both teacher and pupil."

May we send you our booklet on these new
Industrial and Applied Art Books?

ATKINSON, MENTZER & COMPANY

2210 South Park Avenue
 Chicago

organized along vocational lines for a broader and stronger development of the institute after the war.

The institute has appointed Mr. Charles A. Bennett, formerly professor of manual arts, to the office of Dean of Technology. Mr. Bennett is to have in his charge the supervision of the national service courses in technical subjects, trade and day continuation courses and courses leading to mechanical and electrical engineering. It is also planned to place the re-education of soldiers in charge of this department should the services of the institute be needed after the war. As a post-war development it is planned to inaugurate a one-year course for electricians and a one-year automobile course.

The manual arts and vocational courses for teachers and the special courses offered to army mechanics will be continued as formerly, under the direction of Prof. Albert F. Siepert.

A *vocational employment bureau* has been established by the vocational training department of the San Francisco (Cal.) grammar schools under the direction of Andrew P. Hill, Jr., director of the industrial arts department. Boys will be required to pass physical examinations and will be eligible for apprenticeship in woodwork, metal work or mechanical drawing.

A *training course* for vocational teachers has been inaugurated at the Central High School, Evansville, Ind. The course is intended to meet the immediate needs for teachers who have practical experience in the trades which they desire to teach. The course includes trade drawing, trade science, and the theory of teaching trades.

A *domestic art course* has been begun at New York University for the benefit of housewives and teachers who are fitting themselves for supervisory positions in high, evening and vacation schools, ungraded classes, vocational, or trade classes.

A *course in manual training* adapted entirely to women students has been opened at the Rothenberg School, Cincinnati, O. The instruction will include the use of simple carpenter tools, correct methods of sawing, nailing and other carpentry principles.

A *vocational school* has been opened at Baltimore, Md., in the Carroll mansion which has an historic interest in that it was the home of the last of the signers of the Declaration of Independence. It is the purpose of the board to restore the building to its former state, to use it for a time as a vocational center and

when no longer needed, to turn it over to the city as a permanent memorial. The work of restoration of furniture and fittings will be done by the students in connection with classwork.

The board plans to offer as a beginning courses in carpentry, pattern-making, printing, electricity, and house painting and accommodations have been made for 120 students.

The *evening schools of Kansas City, Mo.*, have been commended by Federal Director C. A. Prosser for the excellent work performed in the training of drafted men for war emergency positions. It is estimated that more than 16,000 men have been taught in mechanical trades, enabling them to receive higher pay and to render a greater service to the government. The subjects for drafted men include radio work, machine shop work, gas engine and gas repair work.

The *construction* of the Delgado Vocational School at New Orleans, La., has been postponed until after the war.

The *school board of Cleveland, O.*, has placed the work of the East Technical High School on a productive basis. Students are given orders for all the supplies used in the schools. A requisition for gun racks has been filled.

The *Federal Board of Vocational Education* has opened a branch office at 430 Tremont Street, Boston, Mass. The office is prepared to handle the cases of returned soldiers and to assist employers in need of help.

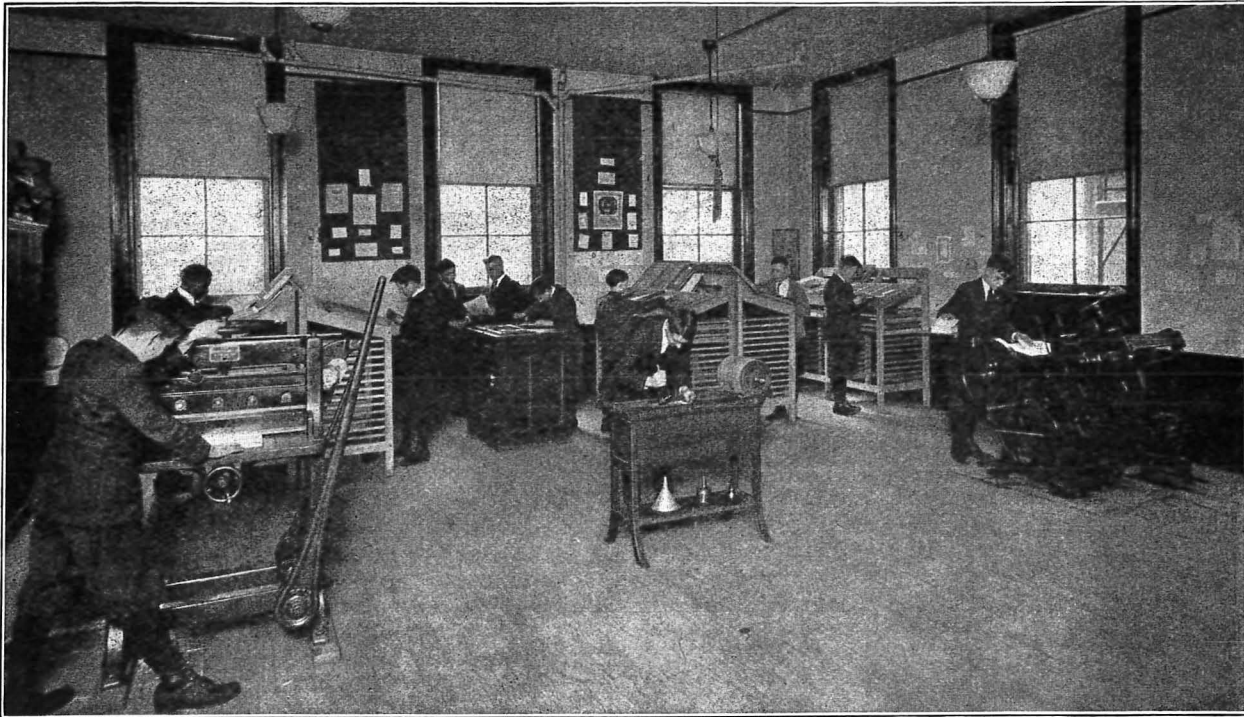
Elyria, O. Vocational courses for men and women over 16 years of age are offered in the evening schools in addition to the courses for drafted men.

The *Green Bay Vocational School*, Green Bay, Wis., opened the fall term with 21 courses of study.

The *non-war construction department* of the War Industries Board has notified the school board of Newark, N. J., that no boys' vocational school will be built during the war unless the War Department should decide to erect the building and devote it to the re-education of wounded soldiers. The postponement of the construction is necessary because of the shortage of labor and steel.

An *evening course* for vocational teachers has been inaugurated at the Buffalo (N. Y.) Normal School. The course is in charge of Mr. Oakley Furney, of Albany, N. Y., assisted by

Continued on Page XXVIII.



Printing Department, Fairmount Junior High School, Cleveland, Ohio

The Greatest Teaching Force in the World Today is

PRINTING

SINCE the invention of movable types the Art of Printing has been the foremost educator of the world. Wherever the printed word was read, there progress has been made. Considering the success that the product of the printing press has achieved as an educator it is small wonder that the educators of today have realized the teaching possibilities contained in the technical processes of the art itself.

These printing department courses ground a boy in the fundamentals of business arithmetic; teach him the necessity in business life of accuracy in the use of words, spelling, punctuation, and so on; train his eye and his hand to serve his purposes, and also give him a view of the relations existing between his industry, the industries of the United States, and those of the world. In the design room the boy is trained in a practical way to understand the definite art principles which underlie the production of the best modern printing. In the printshop he is trained in typesetting, proofreading, handling the machinery, taught about the values and relation of papers and inks, and the related processes of an industry which ranks among the foremost of the world.

Should the boy develop talent in designing, there are prizes ahead; should he achieve skill in handling words, the advertising, or the editorial, or the special writer

fields of the journals and magazines are calling for such trained service; if he takes interest in handling the machinery of the pressroom with its required knowledge of paper, inks, and of colors and electricity, there are well-paying positions of trust and responsibility to be filled. As well as these there are the avenues of bookkeeping, cost accounting, salesmanship, estimating, along which young men may travel to a competent and successful future. Besides these, there are yet other divisions of the Allied Printing Trades, such as book-binding, photo-engraving, electrotyping, and so on, in which a young man who has sound fundamental training may work his way to executive positions. Suggested lists of printing material, courses of study, information regarding teachers, correlation charts, in fact, any information concerning school printing departments may be obtained from the

EDUCATION DEPARTMENT

American Type Founders Company

300 Communipaw Avenue, Jersey City, N. J.

Your Country Calls for Trained Men

To meet the needs of the army and navy and air service Uncle Sam is calling for thousands of trained workers.

These books will help students to quickly acquire the practical knowledge necessary.

Applied Mechanical Drawing

By Mathewson

Shop Mathematics

By Holton

Notes for Mechanical Drawing

By Mathewson

Forge Shop Practice

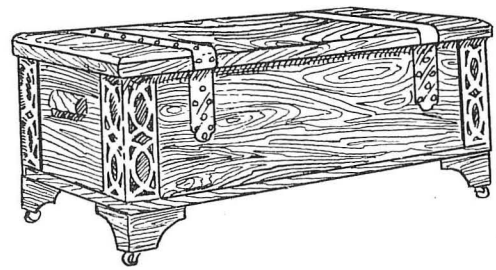
By Littlefield

Sent on 10 days' approval for examination.

THE TAYLOR-HOLDEN CO.

PUBLISHERS

SPRINGFIELD, MASS.



Cedar Chests: How to Make Them

RALPH F. WINDOES

*Instructor of Manual Training,
Davenport, Ia.*

A complete reference book on Chest Construction for students, teachers, and others interested in Cabinetmaking. Contains chapters on Red Cedar, the Construction of Chests, Chest Designs, the Finishing of Cedar, Artistic Metal Trimmings, the Making of Matting Boxes. Fully illustrated and handsomely bound in cloth. Price, postpaid, \$1.

ADDRESS ORDERS TO

The Bruce Publishing Company

212 Montgomery Bldg.

MILWAUKEE, WIS.

(Continued from Page XXVI)

Charles C. Root, Joseph E. Phillippi, C. B. Bradley, Frederick Woellner, Laura M. Weisner, and Helen Englebreck.

The establishment of a vocational training school for shipyard workers at Los Angeles, Cal., is proposed. It is planned to erect school buildings costing approximately \$25,000 and accommodating several thousand men.

A course in telegraphy is planned for girls at the Worcester Trade School. The graduates of the course will take the places of men left vacant thru calls to government service.

During the past summer 1,642 students of the Lane Technical High School, Chicago, took the places of men called to the colors on farms and in essential industries. The total earnings of the students amounted to \$128,487, most of which have been invested in Liberty Bonds.

A group of 349 students who went on farms earned a total of \$33,192. One hundred and twenty-three earned a total of \$7,295 in machine shops, 43 bakers' apprentices made \$6,880, 25 plumbers' apprentices earned \$2,500, and 24 salesmen made \$2,172 selling a variety of goods.

Evening courses offering instruction in a variety of war subjects have been inaugurated in ten different centers at Rochester, N. Y. Registration for the first week reached 1,431. The shop courses offer instruction to drafted men in Class One and also to men and women in essential industries. A total of 437 men have been trained and sent out for signal corps work.

The cabinet shop of the Technical High School at Oakland, Cal., recently completed an order for one hundred bedside tables for the Red Cross. The work was in charge of Mr. J. A. Robison, head of the industrial arts department.

The school shop has accepted a second contingent of two hundred drafted men for special training in war mechanics.

England, Russia, and the United States are the only three great nations which have not adopted the metric system of weights and measures. There are, however, striking signs of progress in the direction of the universal adoption of metrics. Hundreds of American manufacturers have introduced metric measurements so far as possible in the manufacture of their goods, and this is becoming constantly more necessary as our export trade grows. The war is hastening the process thru the best production of manufactures for the allied nations. The British Association of

Commerce has requested the government to take up the question of the metric system with the United States and Russia and has asked that decimal currency be immediately adopted as a step preceding the general adoption of the system.

The manual training department of the Tilden School, Detroit, Mich., fills orders for the caning of chairs. The proceeds of the work are turned over to the Junior Red Cross Fund.

An occupational therapy class has been formed at the John Herron Art School, Indianapolis. Block printing and netting are being taught under the supervision of Miss Louise Maltby, formerly at the Emmerich Manual Training High School. The occupational therapy course aims to give instruction in various lines of handicrafts to women wishing to qualify as occupational aids in convalescent hospitals. In addition to block printing and netting, the course includes handloom weaving, toy making, wood carving, and pottery.

Akron, O. Classes in technical and industrial lines for the army have been formed at three high schools. Courses are offered in radio buzzer work, automobile repair and automobile driving, electrical construction, airplane woodwork, welding, gas engine construction and vulcanizing.

Arizona's vocational training under the Smith-Hughes act is not to be highly specialized for the reason that the state authorities feel that local conditions must be given wider but not so intensive treatment as in the states where there are large cities. It is pointed out that Arizona has no city of more than 25,000 population, and therefore the opportunity does not exist for placing specialized workmen. The men must be familiar with various branches of a trade or a group of trades.

Courses suggested comprise carpentry and joinery, three years; printing, four years; sheetmetal, one year; and machine operation, two years.

Mr. John Kreider, director of industrial courses at Reading, Pa., has issued a report on the industrial courses which have been inaugurated in the schools for the benefit of pupils between the ages of 14 and 16 years who leave school upon reaching the legal age for work.

During the month of March a survey was taken in the grade schools to see whether the number of eligible pupils would warrant the opening of an industrial school. In the reports it was

shown that more than one hundred pupils of these ages sought access to one of the five courses to be offered.

As a result schools were opened at two grade centers with an enrollment of 54 boys and 17 girls. The subjects taught included mathematics, English, hygiene, civics, geography and history, correlated with industrial and scientific training. Girls spent three hours in the laboratory and boys one hour in shop mechanical drawing and two hours in shopwork. The subjects taken in the order of popularity were electrical construction, machine shop work, carpentry, printing, plumbing and sheet-metal work. It is planned to add automobile construction, concrete work, plumbing and sheetmetal work, thereby giving courses suggested by the government as especially beneficial at this time. The pupils are anxious to have the school continued, altho many of them will be of the age when they can leave school.

A course in industrial training for teachers is being offered at the Newark Technical School under the direction of J. G. Spofford. The course is particularly timely, in that it will comprise factors of efficiency in organizing training departments, relation of training department to the other departments, attitude and point of view of instructors and discipline. It is the first to be organized in the state and is directly connected with the State Department of Education, with Mr. Wesley J. O'Leary as supervisor.

Special points made in the course are: Instruction as to how to break in green hands to operate machines, this phase of the work dealing largely with the points to be considered in the efficient operation of type machines and analysis of type jobs to be done. This analysis will be based on the jobs that are actually done by the plants represented by the members of the class, and will be based on the operation sheets used in these plants. An attempt will also be made to separate mechanical operations and the thought element accompanying them, and to assist the prospective instructors in getting insight into the most effective way of "putting over" to a learner the various points brought out in the analysis.

A federal vocational school has been opened in the high school at Lima, Ohio, for men in the army. Instruction is offered in motor truck driving and repair work, radio and buzzer work, oxy-acetylene welding and motorcycle repair. Classes meet three times a week and sessions are from seven to ten o'clock.

During the recent influenza epidemic at Syracuse, N. Y., the schools were turned into community diet kitchens, with domestic science teachers in charge. Approximately 1,600 meals were served to families where illness prevented the preparation of food. The soup was prepared in large quantities and carried in large containers to waiting motor trucks from which it was delivered to the homes.

Two classes for men who are preparing themselves to become teachers of vocational subjects have been established at the Lane Technical High School, Chicago, in charge of Mr. Carl Hoffman and Mr. Edward Fritch. The work, which is under the auspices of the University of Illinois, is being temporarily directed by Mr. A. G. Bauersfeld, supervisor of high school manual training for the Chicago schools.

Sixty-four men have enrolled for the work, which has the united support of the Chicago Trade Unions and of the schoolmen of Illinois. The men are all expert journeymen and most of them are of the serious student type who have attended night school in past years for the purpose of self improvement.

Prof. Ira S. Griffith, who has been detained at the University of Missouri on account of war conditions, is in charge of the vocational teacher-training work for the University of Illinois. He has established headquarters at 416 Continental and Commercial Bank Building, 208 S. La Salle St., Chicago.

FLATHEAD COUNTY CHILDREN'S FAIR.

A novel type of rural fair was that held in October at Kalispell, Mont., by the boys and girls of Flathead County. The exhibits which included cattle, pigs, canned products, home baking, and sewing were prepared and entered by the boys and girls of the county.

The fair was managed by a board of executive officers and the awards were made by a group of sixteen judges. The exhibits were considered equal, and in many cases superior, to those formerly displayed by adults at the county fair.

A part of the fair was the patriotic pageant given by the schools of the county in which more than two hundred children took part. The pageant drew a large attendance from the county and the lectures on farm subjects were enjoyed by the children and adults.

The success of the fair was made possible thru the assistance given by Mr. H. N. Kauffman, director of the Boys' and Girls' Clubs, Miss Mary Eckstein, county superintendent of schools, and the board of directors of the fair.

Works of Charles B. Howe, M. E.

AGRICULTURAL DRAFTING

Will assist the agricultural student to a knowledge of the principles of mechanical drawing and their practical applications to his needs. The teacher will find it of value in reinforcing his presentation of the subject matter and in supplying him with convention, data and problem sheets.

vii+63 pages. 8 by 10 $\frac{3}{4}$. 45 figures,
26 plates. Cloth, \$1.25 net.

MECHANICAL DRAFTING

Presents the subject in such a manner as to stimulate the interest of the student, and serves a much more useful purpose than does the formal drawing usually taught. The chief value of a knowledge of mechanical drawing is its utility as a medium of expression, which has been the point of view from which this text was prepared.

x+147 pages. 8 by 10 $\frac{3}{4}$. 165 figures,
38 plates. Cloth, \$1.75 net.

By Benton A. Greenberg, B. A.
and

Charles B. Howe, M. E.

ARCHITECTURAL DRAFTING

In this book an elementary knowledge of mechanical and free-hand drawing on the part of the student has been assumed. The cultural, as well as the practical, aspects of the subject are presented, and the text has been adapted in its scope to the time available for a course of one or two years in secondary schools.

viii+110 pages. 8 by 10 $\frac{3}{4}$. 53 figures,
12 plates. Cloth, \$1.50 net.

Use This Coupon

JOHN WILEY & SONS, Inc., 432 Fourth Avenue, New York City

Gentlemen:—Please send me for 10 days' examination the books checked below:

HOWE—Agricultural Drafting

HOWE—Mechanical Drafting

GREENBERG & HOWE—Architectural Drafting

If I decide to keep these books I will remit their price. If not I will return them within reasonable time, postpaid.

Name

Address

If teacher, state school

If not teacher, give reference

I.A.M. 12-18

Drafting Material for Schools and Colleges

Drawing Instruments



**Angles
Tee Squares
Drawing Boards
Scales
Inks**

Drawing Paper

Write for our Prices and Catalog

United States Blue Print Paper Co.

327 So. La Salle St.,

Chicago, Ill.

Artists' Materials Drawing and School Supplies



**F. W. & Co.'s "Students"
or School Water Colors**

In tubes, half pans, and cakes

**F. Weber & Co.'s Water-
proof India Inks**

Black and Nine Colors

"Sphinx" Superior Crayola

**"FABRIANO" Handmade
Water Color and Drawing
Papers**

**SCHOOL DRAWING PAPERS, DRAWING
INSTRUMENTS, BOARDS, TABLES**

Equipment of Art and Drawing Rooms a Specialty

**FRENCH PEN PAINTING OUTFITS AND
MATERIALS**

F. WEBER & CO.

Manufacturers and Importers

Artists' Materials and Drawing Supplies

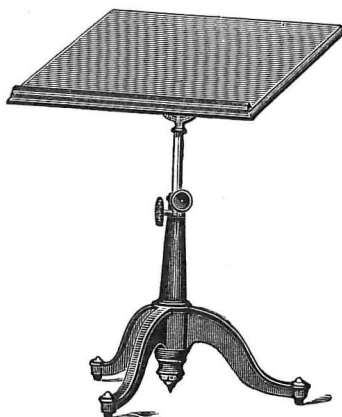
1125 CHESTNUT STREET

Branch Houses: St. Louis, Mo. PHILADELPHIA, PA.
Baltimore, Md.

GET POSTED ON POST

Before you specify your Drafting and Drawing supplies, if you want better results.

All our Drafting and Drawing Supplies and Furniture are made in our factory and supplied direct.



Write for prices and catalog today.

The Frederick Post Company

Chicago, Illinois

SAN FRANCISCO
CAL.

LOS ANGELES
CAL.

PORTLAND
ORE.

VENUS PENCILS

set the standard by which
all pencils are judged.



MATCHLESS excellence has made VENUS the largest selling quality pencil in the world. VENUS is the best pencil for *your* work.

17 Black Degrees

6B Softest to 9H Hardest

and 3 Copying.

14¢ OFFER!

Send 14c in stamps for 3 trial samples. After you find how perfect they are, buy VENUS' regularly of your dealer.

American Lead Pencil Co.

207 Fifth Avenue, Dept. A, New York
and Clapton, London, Eng.



THE WAR AND THE SCHOOLS.

South Bend, Ind. Evening classes have been formed for instruction in machine shop work, automobile repair work, gas engine work, sheetmetal, forging, drafting, radio and buzzer operation.

Milwaukee, Wis. A campaign has been conducted to interest drafted men in vocational training. The work is the result of a conference called by Monsena Dunn, supervisor of war training classes for the state board of vocational education.

Johnstown, Pa. The vocational school has announced that it has accommodations for additional students in radio buzzer operation. Drafted men are especially desired for active service with the signal corps.

Pupils in the manual training department at St. Petersburg, Fla., have begun the making of crutches for the use of wounded soldiers.

The Massachusetts Industrial Accident Board has opened a vocational training division for persons disabled by industry or war. Mr. V. Otis Robertson, of Brookline, who has been selected as the first head of the school, is to undertake the training of disabled men for self-supporting, self-satisfied and independent livelihoods. Mr. Robertson is a graduate of the University of Mississippi, and has had some years of teaching experience.

Plans have been completed by the officials of the Loyal Order of Moose for the enlargement of the vocational school at Mooseheart, Ill., to care for the disabled men of the order who are serving in France.

The plans include the restoration to productiveness of the permanently injured men whose wounds will prevent them from again taking up their trades. As the first step in this direction the Order has appointed Dr. John D. Nichols, of Indianapolis, as physician in charge of the Mooseheart Hospital.

The large training schools of the Order of Moose are located about forty miles from Chicago and were intended primarily as a home for dependent orphans of former members. The school at the present time shelters 640 of these children, all of whom are being taught a useful occupation. There are a number of the graduates of the school in active service in France.

Supt. W. W. Earnest, of Champaign, Ill., has issued in the form of a four-page sheet, information bearing on his latest pamphlet entitled *A War Catechism*. The paper gives the selling prices of the pamphlet in quantities and includes the opinions of one hundred leading men and women in education, periodical publishing and military lines. One and all commend the pamphlet for its helpfulness in the classroom and for its valuable service to the public.

The creation of two southern offices to take care of the vocational education of handicapped American soldiers has been announced by the Federal Board for Vocational Training. Headquarters for District No. 5 covering Tennessee, North and South Carolina, Florida and Georgia, are located in Atlanta. The acting officers are Raymond W. Ferris, district vocational officer; James L. Sibley, district superintendent of advisement and training; R. C. Kelly and Philip W. L. Cox, vocational advisors.

District No. 4 covers Virginia, West Virginia, Maryland, and the District of Columbia, with headquarters at Washington. Its acting officers are George C. Greener, district vocational officer; W. F. Shaw, case officer; Theo. J. Rowland Fisher and Dallas Johnson, vocational advisors.

The United States General Hospital No. 9, located at Lakewood, N. J., has organized complete therapeutic occupational work for disabled soldiers who have been returned from France. The educational work of the hospital is not limited to convalescing men, but includes also bed patients who can in any way be helped by undertaking vocational or academic work.

The educational work is divided into six departments offering respectively academic subjects, commercial subjects, industrial work preparing for occupations, agricultural work, special physical training and music. The bedside occupational work includes art leather work, toy making, basketry, cord work, knitting and weaving.

The department is in charge of Major Regal, assisted by R. T. Johnston, former head of the manual arts department at Montclair.

The Federal Board of Vocational Education has undertaken a study of the work being done abroad in the rehabilitation of disabled soldiers and sailors. A commission consisting of three representative men in industrial and vocational lines was appointed to make the study.

The commission, which is represented by F. G. Nichols, assistant director of commercial education of the Federal Board, Edwin L. Holton, of the Kansas Agricultural College, Manhattan, and W. H. Magee of the Industrial Education Department,

A pencil that suits to a T

The harder grades mark clear, clean and without catch or scratch. That's because the leads are absolutely gritless. The softer grades are smooth, easy-flowing, responsive and withal remarkably smudgeless.

**DIXON'S
ELDORADO**
"the master drawing pencil"

is the tool of efficiency for every kind of technical work. "A real American Achievement" it has been called by many who never thought a pencil of such quality could be made in this country.

Write us now on your letter head, stating the degrees you usually use and your dealer's name and we will send you full-length samples free.

JOSEPH DIXON CRUCIBLE COMPANY

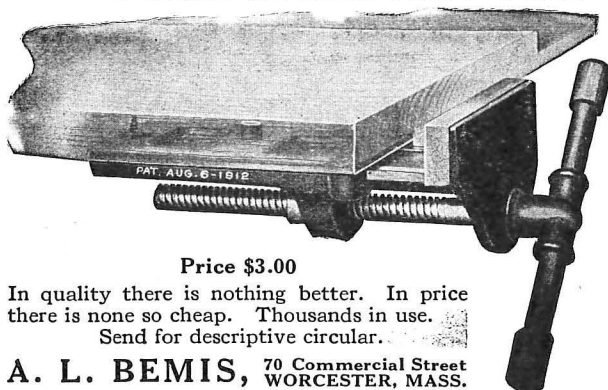
Established 1827



Dept. 128-J

JERSEY CITY, N. J.

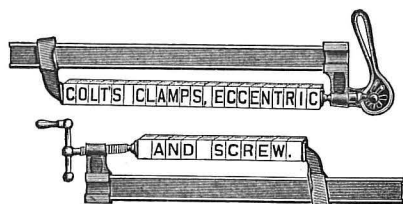


THE BEMIS STANDARD VISE

Price \$3.00

In quality there is nothing better. In price there is none so cheap. Thousands in use. Send for descriptive circular.

A. L. BEMIS, 70 Commercial Street
WORCESTER, MASS.



Forty styles of Quick Acting Clamps for the Worker in Wood, Cement and in the trades generally.

Your dealer will supply you.
Ask for catalog No. 278.

BATAVIA CLAMP CO.

219 Center Street

BATAVIA, N. Y.

PRINTING DID IT!

William Dean Howells writes thus:

"With me the Printers' Craft was simply my joy and pride from the first things I knew of it. I know when I could not read, for I recall supplying the text from my imagination for the pictures I found in books; but I do not know when I could not set type. My first attempt at literature was not written, but put up in type and printed off by me."

Not everyone who sets type early becomes a W. D. Howells; but every such an one becomes a wiser and a stronger man than he otherwise would.

We supply the outfits.

BARNHART BROTHERS & SPINDLER

CHICAGO WASHINGTON DALLAS SAINT LOUIS
KANSAS CITY OMAHA SAINT PAUL SEATTLE

SET IN PENCRAFT FACES PENCRAFT BORDER

**Adjustable --- Dependable
CLAMPS**

Here is a Clamp that can't be beat. They're just the thing for your Manual Training Department. After you have once used them you will wonder how you could ever get along without them.

The "Jorgensen"

is specified thruout the country by Supervisors, because it is fast becoming the "Standard."

The "Jorgensen" is cataloged by the leading hardware dealers thruout the country.

Write us today for full information.

ADJUSTABLE CLAMP CO.

216 North Jefferson St.

Chicago, Ill.

RED GUM

"THE LOVELIEST CABINET WOOD
IN ALL THE WORLD."

NATIVE TO AMERICA. PLENTIFUL.
BEAUTIFUL. WORKABLE. TRY IT.

RED GUM

ADDRESS RED GUM DIVISION

AMERICAN HARDWOOD MFRS. ASS'N

1515 Bank of Commerce Bldg., Memphis, Tenn.

**Cushions, Spring Seats
Upholstering Supplies**

We issue price list which also contains valuable information for Instructors in Manual Arts.

It is free—write for it.

DODGE-DICKINSON CO.

Bloomington, Illinois

Richmond, Va., sailed for Europe August 27th. The commission will spend several weeks in France and England studying the various types of schools and classes which have been organized for this purpose.

A total of 2,640 colored soldiers in thirteen vocational schools received special technical training in addition to military instruction under the direction of the War Department Committee on Education and Special Training. Courses given included automobile mechanics, blacksmithing, carpentry, electricity, horse-shoeing, machine shop work, plumbing, wheelwrights, radio operators, telegraphers, tractor operators and electricians.

The schools to which the training detachments were assigned included the following:

Howard University, Washington, D. C.; Atlanta University, Atlanta, Ga.; Florida Agricultural College, Tallahassee, Fla.; Georgia State Industrial School, Savannah, Ga.; Hampton Institute, Hampton, Va.; Negro Agricultural and Technical College, Greensboro, N. C.; Wendell Phillips School, Chicago, Ill.; Wilberforce University, Xenia, O.; Tuskegee Institute, Tuskegee, Ala.; Western University, Quindaro, Tex.; Branch Normal School, Pine Bluff, Ark.; Prairie View Normal School, Tex.; South Carolina Industrial School, Orangeburg, S. C.

A further distribution of 7,725 white men for special training was also made during the summer. A total of 21 states were represented in the training units which were sent out.

ROLL OF HONOR.

The following men in the manual training department at Louisville, Ky., have entered the government service: A. C. McMillen, L. M. Humphrey, Hayden Klein, Robert Smith.

The following manual training teachers in Porto Rico are in government service: James Armstrong, Mayaguez, Aviation Service; Julian Armstrong, San Juan, Army; Joseph E. Barta, Rio Grande, Army; Arthur S. Casey, San Juan, Aviation; Luis Colon, San Juan, Army; Jose Figueras, San Juan, Army; Rafael Jimenez, Cayey, Army; Martin A. Lutzen, Guayama, Army; Jose Mercado, Camuy, Army; Fernando Miura, Juana Diaz, Army; John P. O'Toole, Rio Grande, Army; Frank S. Pugh, Army; Albert W. Tenney, Arecibo, Army; E. Torres, Rio Piedras, Army; Angel Whatts, San Juan, Army.

The following men from Columbus, Ohio, have entered the service: P. E. Smith, J. D. Marple, E. H. Poulton, H. S. Canfield, J. R. Meara, P. S. Jackson, R. F. Leitch, J. P. Jacks, R. B.

Pennell, J. G. Keller, R. H. McCall, C. E. Seddon, J. F. Parkinson, M. B. Perrin, W. D. Lucktenberg, K. A. Leach, and C. A. MacDonald.

Theo. Perrier, New Orleans, La., U. S. Army.

George Gordon Keller, formerly teacher of manual training, Oak Park, Ill., was killed recently at Kelly Aviation Field, San Antonio, Tex., when his airplane collided with that of another cadet. Mr. Keller was a graduate of Bradley Polytechnic Institute and previous to his enlistment, was connected with an architectural firm in Boston.

Floyd Smith, Jefferson, Wis., A. E. F., France.

George Kellerman, Cumberland, Wis., A. E. F., France.

Samuel R. Marshall, Morning Sun, Ia., A. E. F., France.

D. E. Dunham, Oshkosh, Wis., U. S. Army.

Archie Richards, Brooklyn, Wis., A. E. F., France.

L. E. McKinstry, Kankakee, Ill., A. E. F.

J. Palmer Muntz, Buffalo, N. Y., U. S. Navy.

Austin Alden, Gorham, Me., U. S. N., overseas.

Forrest G. Baker, Tipton, Ia., Topographical Section, U. S. A.

Harry V. Jones, Brodhead, Wis., A. E. F.

D. P. McCallum, Deseronto, Ont., Royal Air Forces.

E. L. Newsom, Wilkesville, O., A. E. F.

John Ferns, St. Anne, Ill., National Army.

The following men from the manual training department at Detroit, Mich., have entered the service: George R. Schaffer, Veterinary Corps; James R. MacNeil, National Army; Earl D. Mauch, Navy; S. E. Nelson, Navy; W. H. Clarke, Inspector; Austin M. Cline, National Army; Alexander Meininger, Regular Army; Russell Enrig, National Army; E. Lewis Hayes, Aviation. James MacCracken, Schenectady, N. Y., Engineers' Corps. Frank Coombs, Topsham, Me., National Army.

L. M. Dudek, Campbell, Neb., died in service Oct. 10th at Fort Sill, Okla.

A CALL FOR MANUAL TRAINING TEACHERS.

The Chicago board of education has issued a call for manual training teachers in the high schools. An examination for certificates has been arranged by Mr. Albert G. Bauersfeld, supervisor of high school manual training, to be held on December 27 and 28, 1918.

The tests will cover major examinations in mechanical drawing, foundry, woodworking, electrical construction, sheet-metal, printing, machine shop practice, and blacksmithing.

Two forms of certificates will be granted:

(1) *Limited Certificates.* No university degree is required but candidates must present in advance credentials showing: (a) A diploma of graduation from a four-year high school course of the grade of the Chicago high schools. (b) At least three years of special training in the major subject. The latter may be interpreted as meaning two years of a special teachers' training course and one year of teaching a major subject. (c) Six years of special training (trade experience in manual training subjects). This section does not apply to mechanical drawing.

(2) *General Certificates.* Candidate must present in advance credentials showing the following:

(a) Graduation from an accredited college. (b) Two years of successful experience in graded schools, and two years of practical experience in the major subject; or (a) Graduation from an accredited college. (b) Two years of successful experience in teaching the major subject.

The Chicago board pays holders of limited certificates a minimum of \$1,200 and grants annual increases of \$86 up to a maximum of \$2,575. Holders of general certificates are paid \$1,200 minimum and advance in scale by \$112.50 annually up to \$3,000.

Detailed information is available from Mr. Bauersfeld.

ART AND THE INDUSTRIES.

The Architectural League of New York City held an interesting meeting at Cooper Union Museum on October 10th to discuss "The Urgent Need for Preparedness in Art and Industries." The meeting sprang from the growing realization that if the United States is to prosper in the industrial world after the war she must begin her preparation immediately. In Germany united and collective action in all educational activities connected with the welfare of important industries has always been assured thru autocratic governmental order, but in America the training and education of artisans and craftsmen always has been left to voluntary effort.

Men closely associated with furniture making, textile weaving and all the home furnishing trades allied to architecture are well aware, the league maintains, that the largest and most vital industries in the country are even today dependent for their prosperity on craftsmen, designers and experts of many kinds, educated and trained in the industrial schools of the Central Powers. The league maintains that until American experts can be produced thru education and training to direct the industrial and artistic activities of the United States, the industrial prosperity of this country must still be in jeopardy.

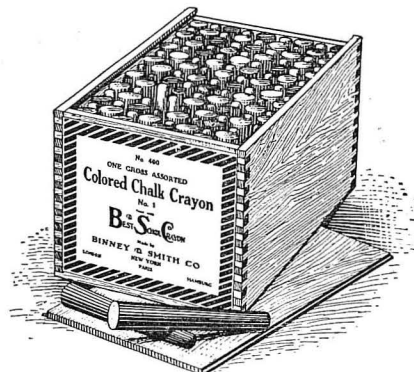


**TRADE
CRAYOLA
MARK**

will help realize the possibilities
in Crayon Drawing.

Be it landscape, poster or design, we make a Crayon to fit each need.

"Crayola" Drawing Crayon
"Spectra" Pastel Crayon
"Boston" Pressed Crayon



COLORED CHALK

A splendid medium for Black-board work in color.

Our Lecturers' Crayon is made up in large square chalk sticks, that give the broad flat marks so desirable in poster work.

We shall be pleased to send samples
of any of our

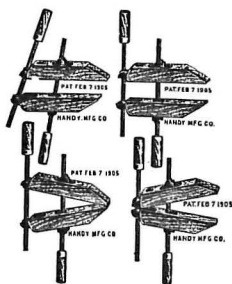
GOLD MEDAL CRAYONS

For Every Use.

BINNEY & SMITH CO.

81 Fulton St.

New York

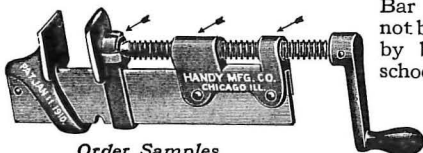


"HANDY" HAND SCREWS

The Best and Strongest

Adjustable to any position. Cold rolled steel screws and nuts with *quick acting* double thread.

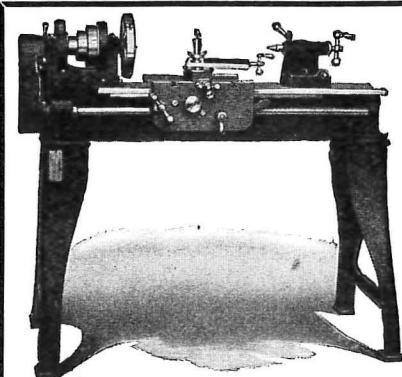
STEEL BAR CLAMP



Bar will not bend; will not buckle the work. Used by big factories and schools since 1905.

Send for Catalog

Order Samples
HANDY MFG. CO., 21 E. Madison St., CHICAGO, ILL.



SEBASTIAN
10 in. Swing.

Motor or
Counter Shaft
Drive.

Best for
School pur-
poses.

THE SEBASTIAN LATHE CO.
102 Culvert St. Cincinnati, Ohio

NEWS OF THE MANUFACTURERS

A VALUABLE CATALOG OF TECHNICAL BOOKS.

The U. P. C. Book Company has just issued a valuable new catalog listing and describing in detail its books on sheetmetal work, plumbing, heating and the allied industrial subjects.

The U. P. C. Book Company is a new firm which has purchased the entire lists of books published by the Metal Worker, the Building Age and several other technical publishers of New York City. Its policies are in the direction of publishing and selling only the best text and reference books in the several trades and industries which it covers.

Copies of the new catalog will be sent to any reader of the *Industrial-Arts Magazine* who addresses the firm at 243 West 39th St., New York City.

PERSONAL NEWS NOTES.

Mr. J. W. Liddell, of Tacoma, Wash., has been appointed supervisor of manual training at Olympia. He succeeds H. R. Porter, who has entered the military service.

Miss Gladys Campbell, domestic science instructor at Charlevoix, Mich., has accepted a position as dietician at the naval hospital, New London, Conn.

Mrs. Margaret Abels, examiner for the girls' and women's division of the United States Employment Service, has accepted the position of vocational advisor at Central High School, Minneapolis, Minn.

Mr. Oakley Furney, of Albany, N. Y., has been appointed director of vocational education at the Buffalo Normal School, Buffalo, N. Y. Mr. Furney is a graduate of a number of colleges and normal schools and has had six years of experience as director of vocational education at Albany.

Mr. Waller Deshaw, assistant foreman in a newspaper composing room at Burlington, Vt., has been appointed teacher of printing in the Junior High School.

Mr. John V. Lynn has been appointed supervisor of vocational education for trades and industries in Iowa. Mr. Lynn has completed plans for courses in automobile mechanics and buzzer work in the high schools of Des Moines.

"Buy by the Cypress Arrow"

"SIGNED LUMBER IS SAFE LUMBER"
SO INSIST ON TRADE-MARKED "TIDE-WATER"

CYPRESS

Lumber—Because it's "The Genuine Wood Eternal"

& LASTS & LASTS & LASTS & LASTS

Tell your lumber dealer about it.

Look for this on every board—

Accept no Cypress without this mark.



HAMMERS

A
M
M
E
R
S

Made with our Non-slip Claw



The Claw Grips—It Never Slips.

Ask for our "Blue Print" circular showing the features of our Nail Hammers. We make all patterns of Hammers. Our new 1917 Catalogue is ready. Write for copy.

Ask your jobber for V & B Hammers

VAUGHAN & BUSHNELL MFG. CO.
2114 Carroll Avenue CHICAGO, ILL.

Mr. L. H. Blakely, assistant manual training instructor in the high school at Medford, Ore., has been made supervisor of manual training. Miss Ethel Newland has been placed in charge of the classes in mechanical drawing.

Miss Louise H. Maltby has been selected to teach block printing and netting in the occupational therapy class at the Herron Art School, Indianapolis, Ind. Miss Maltby was for several years an assistant in the art department of the Emmerich Manual Training High School.

Prof. N. B. Yeardley, for a number of years supervisor of manual training and music at Cincinnati, died of incipient anaemia at his home. Prof. Yeardley was 58 years old.

V. Otis Robertson, a prominent lawyer and businessman, has been appointed director of the vocational training division of the Industrial Accident Board of Massachusetts. Mr. Robertson is the first man in the United States to undertake the work of rehabilitating the thousands of persons maimed thru industrial accidents.

Prof. Robert J. Leonard, for the past year regional director of industrial education with headquarters at Indianapolis, has been called to the University of California as director of a new department of vocational education.

Prof. Leonard is a graduate of Teachers College, Columbia University, and has had nine years' experience as a teacher of industrial arts. In 1914 he made a study of the paper box industry for the New York State Factory Investigating Commission. Later he was called to the University of Indiana to become professor of vocational education, which he held up to the time of his appointment as regional director.

Mr. Rolland R. Gove, for some years an instructor in the Morrill School of Mechanic Arts in Concord, N. H., and lately supervisor of manual training and printing there, has resigned to become supervisor of mechanic arts in Laconia, N. H., the high school there having added a mechanic arts course this year.

The foremen of the McDougal Shipbuilding Company, Duluth, Minn., presented on September 18th, to F. W. Ried, of the U. S. Shipping Board, a gold watch suitably engraved, in appreciation of his work with them.

The following members of the Boston Manual Training Club are staff instructors with the U. S. Shipping Board:

PERFECTION POTTERY KILNS

BEST BUILT
KILNS

For Firing Biscuit, Clay Bodies and Glazes.

EQUIPPED FOR

Kerosene Oil, Manufactured and Natural Gas
For Educational and Technical Purposes.

SAFE! CLEAN! DURABLE!

PERFECTION KILNS

For Firing Decorated China and Glass.

MOST MODERN KILN CONSTRUCTED

UNIVERSAL SATISFACTION

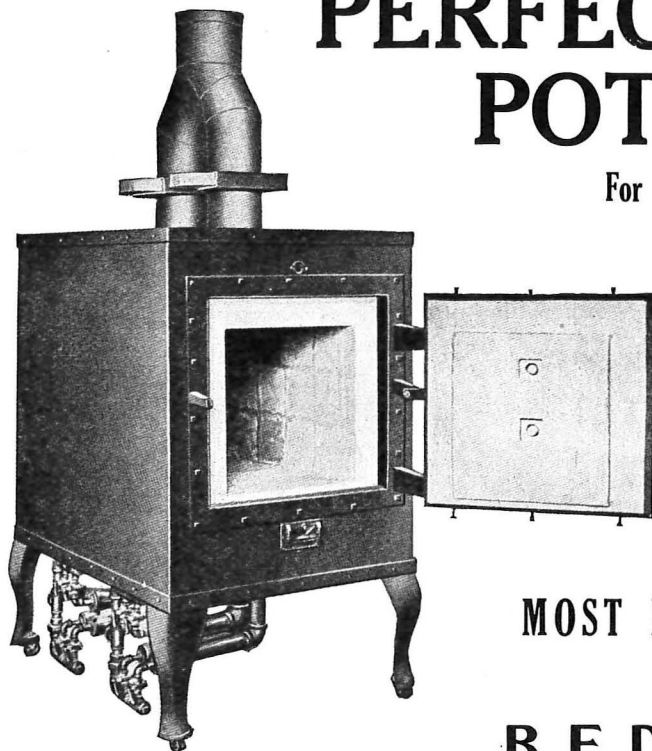
B. F. DRAKENFELD & CO., Inc.

50 MURRAY ST.

NEW YORK, N. Y.

Illustrated Catalog Mailed on Request

NO. 8 PERFECTION POTTERY KILN
Equipped with Gas Burners



F. W. Ried, State Normal School, Framingham, Mass., on leave by permission of the Massachusetts Board of Education; J. A. Fisher, on leave by permission of the Boston School Committee; H. S. Hale, on leave by Framingham, Mass., School Board; W. B. Henry and E. W. Beck.

Mr. Geo. Henry Jensen, who is head of the industrial education department at the University of Washington, is now District Representative of the Emergency Fleet Corporation in charge of education and training of the industrial relations group.

Mr. Jensen recently made an extended tour thru the east to study the education departments of the Emergency Fleet Corporation plants at Hog Island, Baltimore, Newark, and other points. He is in charge of all vocational work for the shipyards of the northern Pacific coast.

Edward H. Crussell, formerly with the industrial arts department at Sacramento, Cal., has become assistant in vocational education at the School of Education, University of Washington. Mr. Crussell is instructor in the teacher-training courses for the trades and industries under the Smith-Hughes law.

Miss Eleanor D. Toaz, formerly assistant professor of household arts, University of Cincinnati, Ohio, has been appointed specialist in vocational education for girls, Division of Agricultural and Industrial Education, State of New York.

Mr. Leon L. Winslow, of the Bowling Green, Ohio, State Normal College has been appointed specialist in drawing and industrial training in the Division of Agricultural and Industrial Education of the New York State Department.

Mr. Raymond V. Long, of the Farmville, Virginia, Normal School, has been appointed professor of industrial arts at the Bowling Green, Ohio, State Normal College to succeed Mr. Leon L. Winslow.

Arthur D. Dean, professor of vocational education at Columbia University, has been placed in charge of courses for training teachers for military reconstruction hospitals. He holds the rank of major in the sanitary corps.

Buffalo, N. Y. Mr. Samuel F. King has been appointed principal of the Black Rock Vocational School.

Mr. H. M. Appleman, formerly at South Bend, Ind., has gone to Indianapolis to assist the state director of vocational work in conducting classes for army mechanics.

Miss Mildred Wilson, supervisor of domestic science at Niagara Falls, N. Y., died of pneumonia after a two-weeks' illness. Miss Wilson was 23 years old.

Chester L. Pepper, formerly agent for industrial education for the Massachusetts State Board, has been appointed a member of the Federal Department for the Rehabilitation of Disabled Soldiers. Mr. Pepper has been assigned the work of vocational adviser for the hospitals of District One, comprising New England.

The New Bedford Textile School has elected the following as trustees: Abbot P. Smith and Samuel Ross, New Bedford, Mass.; George H. Wren, Springfield, Mass.; Thomas H. Kirkland, Springfield.

Mr. Irving C. Perkins, supervisor of industrial education at Auburn, Me., has been appointed State Director of that work and trade schools maintained under the provisions of the Smith-Hughes law. Mr. Perkins will give one-half his time to the state work while continuing to act as supervisor at Auburn.

Mr. Dwight F. Meserve, formerly teacher of manual training at Calais, Me., died in October, at Fort Slocum, N. Y., after a short illness of pneumonia.

BLOOMFIELD SCHOOL FAIR.

An extensive agricultural exhibit was an important part of the school fair held during October at the Berkeley School, Bloomfield, N. J. At the fair were displayed quantities of vegetables, fruits, jellies, and preserves, bread, cake, pie and sewing.

The home garden work which was in particular evidence at the fair was fostered and encouraged by the school authorities as a war measure for the stimulation of food production. Supt. George Morris, who was made chairman of the sub-committee in charge of food conservation for the city, conceived the idea of enlisting the children in school and home gardening. The results were convincing evidence that a creditable amount of vegetable food had been contributed to the city and the national supply thru the efforts of the children.

The fair in general was a great success not only because of the great quantity of garden products displayed, but also when considered as a novelty in school work and as a development of practical measures of education. In the opinion of the state home garden expert it was the largest and finest display of garden products ever shown under school auspices.

Industrial Art Text Books

By BONNIE E. SNOW and HUGO B. FROEHLICH

A REMARKABLE RECORD

Some of the Cities, Towns, and Counties in the western territory which have introduced the "Industrial Art Text Books" for use in the hands of the pupils—before the series is ONE YEAR OLD! The books are practical in both city and rural schools.

ARKANSAS

State recommended list.
Camden
Conway
Earle
Fayetteville
Little Rock
Russellville
Waldron

COLORADO

Colorado Springs
Pueblo

CALIFORNIA

Butte County
Colusa County
Fairview
Ft. Bragg
Healdsburg
King City
Merced County
Maxwell
Mendocino County
Monterey County
Princeton
Redwood City
Riverside
Sutter County
Sacramento County
San Benito County
Santa Anna
San Bernardino County
Santa Clara County
Ventura County
Ventura
Watsonville
Yuba City

IDAHO

Boise
Pocatello

ILLINOIS

Allentown
Arcola
Barrington
Blue Island
Centralia
Chillicothe
Christian County
Cook County
East Peoria
Effingham
Elgin
Estes
Henry
Highland Park
Jackson County
Mt. Auburn
Marion
McHenry

Milledgeville
Moline
Murphysboro
Olney
Oregon
Peoria County
Richland County
Richmond
Sterling
Tuscola
Western Springs
West Henry
Woodstock

INDIANA

Allen County
Akron
Bluffton
Chesterton
Connersville
Delphi
Delaware County
Daleville
Edwardsport
Eaton
Elwood
Farmland
Fayette County
Forest
Fulton County
Greentown
Hammond
Howard County
Huntington
Huntington County
Hancock County
Jasonville
Johnson County
Laketown
Lynn
La Porte County
Martinsville
Marion
Marion County
Milroy
Morgan County
Noblesville
Petersburg
Ridgeville
Rushville
Randolph County
Russiaville
Salem
Sweetzer
Swayzee
Tipton County
Tipton
Vincennes
Wabash County
West Lafayette
Winchester

IOWA

Ackley
Allerton
Boone

Cedar Falls
Cedar Rapids
Clinton County
Cresco
Des Moines
DeWitt
Eldora
Le Mars
Libertyville
Mason City
Muscatine
Rowland
Tama
Villisca

MICHIGAN

Beacon
Cheboygan
Escanaba
Hillsdale
Howell
Pontiac
Saline
St. Clair Heights
St. Joseph
Sturgis
Ypsilanti

MINNESOTA

Minneapolis
New Ulm
Stillwater

MISSOURI

Adair County
Aurora
Burlington Jct.
Barnard
Bloomfield
Boonville
Carthage
Clayton
Carrollton
Crystal City
Caruthersville
Excelsior Springs
Elvins
Higsbee
Hopkins
Farmington
Flat River
Graham
Greenfield
Guliford
Higginsville
Independence
Jefferson City
Joplin
Kennett
Keytesville
Kirksville
Kirkwood
La Grange
Monett
Marysville

Monroe City
Moberly
Macon
Nodaway County
Normandy
Oregon
Palmyra
Randolph County
Sikeston
St. Charles
St. Joseph

MONTANA

Billings
Butte

NEBRASKA

Arapahoe
Fremont
Lincoln
Madison
Omaha

OHIO

Akron
Ashtabula
Canal Dover
Celina
Chillicothe
Clyde
Delaware
Elyria
Fostoria
Galion
Granville
Lakewood
Lucas
Mansfield
Marysville
Martins Ferry
Niles
Norwalk
Oberlin
Oak Harbor
Shelby
Toledo
Williamsport

OKLAHOMA

Oklahoma City
Woodward

SOUTH DAKOTA

Austin County
Beadle County
Belle Fourche
Butte County
Custer County
Deadwood
Dell Rapids
Fall River

Hot Springs
Lake County
Lawrence County
Madison
Marshall County
Nunda
Pennington County
Rapid City
Salem
Sanborn County
Tripp County
Union County
Vermillion
Woonsocket

TEXAS

Dalhart
D'Hanis
Kaufman
Littlefield
Thorpe Springs

UTAH

State adoption, both City and County Schools
Murray
Logan

WASHINGTON

Bellingham
Chehalis
Chehalis County
Everett
Fall City
Lewis County
Mt. Vernon
Olympia
Roslyn
Seattle
Spokane
Tacoma

WISCONSIN

Arena
Eau Claire
Fond du Lac
Fond du Lac Co.
Iowa County
Janesville
Kenosha
Lake County
Mt. Calvary
Plymouth
Ripon
Sheboygan Co.
Whitewater

WYOMING

Cheyenne
Laramie

The "Industrial Art Text Books" will help to make American boys and girls the most efficient men and women in the world. They will help America to win "the war after the war." Why not add the name of your town to this "Honor List?"

Send for the last issue of "The Prang Bulletin" containing a full discussion of the Industrial Art movement.

THE PRANG CO. New York Chicago Boston Dallas